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AN INQUIRY

INTO THE PRESENT STATE OF MEDICAL SURGERY;

INCLUDING

The ANALOGY betwixt EXTERNAL and INTERNAL DISORDERS; and the INSEPARABILITY of these BRANCHES of the same PROFESSION.

Rationalem quidem puto medicinam esse debere, instrui vero ab evidentibus causis, obscuris omnibus, non a cogitatione artificis, sed ab ipsa arte rejectis. CELSUS.

VOL. I.

By THOMAS KIRKLAND, M. D.
Member of the Royal Medical Society at Edinburgh.

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To the Right Honourable

FRANCIS Earl of HUNTINGDON,

Baron Haſtings, Hungerford, Newmark, Peverel, Botreaux, Molins, Moels, and de Homet.

MY LORD,

THIRTY-SIX years have now elapſed, ſince I was firſt honoured with the patronage and friendſhip of your noble family; and now, like the navigator, who,

after ſailing in queſt of knowledge, returns to communicate his diſcoveries, I, from gratitude, dedicate to your lordſhip the reſult of my obſervation and experience. In the following Inquiry into the Preſent State of Medical Surgery, my aim is, to recommend this branch of the profeſſion; which, notwithſtanding its high importance, appears not to have been duly attended to by modern writers. The object of it is to aſſiſt nature without mutilating the patient, and to leſſen the neceſſity of manual operations.

Should my labours, in their reſult, contribute to anſwer this purpoſe, I know they will meet your lordſhip's

ſhip's wiſhes; than whom, no perſon is more ſuſceptible of the feelings of humanity. You will read with pleaſure whatever tends to avert an increaſe of miſery from thoſe who are ſo unfortunate as to require chirurgical aſſiſtance.

This introduction, your lordſhip knows, is intended to remove the impediments to medico-chirurgical knowledge, by recommending the ſtudy and practice of medicine in the manner of the Greeks. I am happy in being ſupported in opinion by your lordſhip; whoſe mature judgment and literary acquirements are univerſally known: and I have ventured to make my ſentiments

public, in hopes that others may entertain the ſame favourable ideas of them your lordſhip was pleaſed to expreſs when you honoured my manuſcript with a peruſal. It is intended for the ſervice of mankind, and will not require any other recommendation to your lordſhip.

I have the honour to be,

My Lord,

Your Lordſhip's

Moſt obedient, and

moſt humble ſervant,

Aſhby de la Zouch,
February 1, 1783.

THOMAS KIRKLAND.

PREFACE.

THE following introduction, which refers to the ſubſequent Inquiry, &c. is meant to encourage the ſtudy of that branch of medicine, which cures external diſeaſes chiefly by medicaments, and to prove the inſeparability of Phyſic and what is now called Surgery. Nor is it poſſible to have a clearer inſtance of the neceſſity of a work of this kind, than ſenſible writers in theſe days adviſing chronic ulcers of the legs not to be admitted into the hoſpitals; becauſe they ſeldom obtain a radical cure, and are injurious to the charity. Among the other tracts are the medico-chirurgical works I have already offered to the public, now formed into regular eſſays, and improved by the addition of ſuch knowledge as I have ſince derived from mature reflection and experience.

In

In examining the medical part of ſurgery, I have endeavoured to point out what doctrines ought to be rejected, and what retained; where improvements are wanted, and, as far as practice hath enabled me, in what manner they may properly be made. And knowing that good practice ſprings only from the application of reaſon to experience, I have in general argued from indiſputable facts, and I hope without loſing ſight of the direct object. Wherever I decry theory, I mean that only which is hypothetical, and deſtitute of proper ſupport.

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NOTE.

Having diſcovered that the large arteries have neither ſyſtole nor diaſtole (ſee Addenda to the Treatiſe on Inflammation) the following alterations appear to be neceſſary.

PAGE 168, line 11, *dele* the word action. P. 261, l. 15, *for* ſyſtole *read* motion. P 262, l. 10, They are ſometimes lengthened by the force of the blood expelled from the heart then, and for this office, &c. P. 283, l. 5, incapable of doing their office. P. 291, l. 21, *dele* and arteries P. 369, l. 9, *dele* by encreaſing the action of the veſſels.

ERRATA.

PAGE 20, line 2, *read* but if notwithſtanding ſuppuration comes on, we muſt then forward it. P. 37, l. 2, *for* olite *read* polite. P. 66, l. 11, *for Ietros read Ictroi.* P. 67, l. 17, *after* of *add* the. P. 99, l. 4, *for* gaol *read* goal. P. 138, l. 13, *for* croſs *read* ſuch. P. 226, l. 4, *for* fever *read* fevers. P. 227, l. 10, cold water with a toaſt. P. 313, l. 18, *for* ſincet he *read* ſince the. P. 379, l. 1 *for* ſyrups *read* ſyrup. P. 384, l. 12, *for* Anginora *read* Anginoſa. P. 402, l. 7, *for* noſtrils *read* tonſils. P. 419, l. 16, *dele* brains. P. 473, l. 4, *dele* is. P. 473, l. 16, *for* was *read* is. P. 474, l. 1, *for* trichcaſis *read* tricheaſis. P. 481, l. 6, *for* Opthalmia *read* ophthalmiæ. P. 485, l. 20, *for* anaſtomiſing *read* anaſtomoſing.

INTRODUCTION:

BEING

An Essay on the Inseparability of the Different Branches of Medicine.

Id ante omnia scire convenit, quod omnes medicinæ partes, ita connexæ sunt, ut ex toto separari non possint. Celsus.

Medicine has been retarded in its progress.

WHOEVER is acquainted with the general preface to *Celsus de Medicina*, must know that the above axiom, taken from the beginning of his fifth book, was the result of strict inquiry, mature deliberation, and sound judgment. But though universally allowed to be true, it has been perverted, and the science of medicine retarded in its progress; for notwithstanding it is supposed, that all its branches are now cultivated in greater

perfection, than in former times, it is poſſible we may only be propagating error in new forms. If mutability is a ſign of imperfection, as Pliny aſſerts, medicine was never more imperfect than in theſe days, owing to the cauſe aſſigned, and to the ſpeculative theories men of fertile invention daily make, with the ſame facility that a ſpider ſpins a thread. The lohoch. *e myrrha* of Fuller, is a moſt powerful remedy in nervous coughs; but upon the mechanical doctrine taking place, nothing would do in diſorders of the lungs but removing them with wedge and hammer, and it was thus driven out of uſe. In theſe days, the nauſeating doctrine* of ſpaſm in fevers, probably ſqueezes practice into an aukward form, by torturing the patient to remove effects which never exiſt. The preparations of lead were much

* The horrid practice of keeping up a nauſea for ſeveral hours, to take off ſpaſms of the ſkin!

diſuſed

diſuſed till Mr. Goulard reſcued them from neglect, and ſupported their external application againſt the falſe analogy of ſpeculative men. The ſame may be ſaid of a thouſand other remedies; ſo that neglecting valuable medical compoſitions, and preferring thoſe ſuited to the theory of the times, ſeems, in too many inſtances, to conſtitute what is deemed improvement in medicine. Nor can there be a greater proof of ignorance, in the treatment of diſeaſes, than altering practice, as the weathercock of theory directs; it being a convincing argument, that we know no certain method of relieving or curing them, and that we are guided by medical caprice.

Indeed ſurgery, properly ſo called, is almoſt exempt from theſe ſtrictures; for the *principal part* being accompliſhed by the hand, its effects are evident, and it is practiſed upon more certain grounds than the cure of inward diſtempers, in which

Except that part called ſurgery.

it may often be doubted, whether the recovery is owing to remedies, or the conſtitution: accordingly, manual operation, and a knowledge of ſome complaints requiring this treatment, have been ſo much improved in England, within this laſt half century, that almoſt every one who undertakes the cure of external diſorders, becomes an expert operator.

Nevertheleſs, though this branch of medicine has received ſuch great advantages, an inquiry into the nature and cure of thoſe external diſeaſes, relieved by medicaments, has been too much neglected: for as ſoon as Mr. Samuel Sharp's chirurgical treatiſe appeared, operations in ſurgery, as they have been improperly called, became the chief object of attention. Students were ſoon taught to believe, that the nature and cure of inflammation, abſceſſes, wounds, ulcers, fractures, luxations, &c. were ſettled and agreed on, by

by all the ſurgeons of eminence in Europe*; and hence thoſe who thought not for themſelves, ſaw no neceſſity of examining, what had been written upon theſe ſubjects. Perhaps alſo the parade and eclat, that commonly attend a ſucceſsful operation, might be an inducement to purſue that part of the buſineſs, by which fame was moſt readily acquired; eſpecially in thoſe who had not been properly educated in the practice of medical ſurgery. Formerly the knowledge of this art deſcended from maſter to pupil, and the Tyro was regularly taught the methods of cure which had been approved, and handed down from one ſurgeon to another. But, unfortunately for the ſcience, ſome years ago, moſt of thoſe who commenced ſurgeons in England had been bred Apothecaries; and were never inſtructed in the art of curing external diſ-

Even the cure of external diſeaſes requiring the uſe of medicaments has been neglected.

* Mr. Sharp's Crit. Inq. Preface.

eaſes, until a year's attendance in an hoſpital, and being able to perform operations, gave them credit for being proficients in a branch of knowledge they had not a ſufficient opportunity of attaining: it being impoſſible to learn medical ſurgery without a ſeries of years experience. Accordingly, it muſt have been obſerved, that many men with this education, who have ſhone as operators, have not been able to diſtinguiſh themſelves, in preventing the neceſſity of this treatment, or in the cure of thoſe diſeaſes, where operations cannot with any ſort of propriety be introduced.

The dreſſing of ſores in what manner to be learned.

The dreſſing and cure of ſores is not to be learned by merely looking on; and as nothing is worſe in its conſequences than bad habits, the topical application of remedies ought only to be ſtudied from exact and attentive practice. Dreſſings muſt be applied, with the proper intention

tion of aſſiſting nature; and the hand, by uſe, will acquire dexterity in carrying into execution the dictates of an enlightened mind. A man may ſee bandage uſed daily, and hear of its advantages, without being able to employ it otherwiſe than to do injury, until uſe and obſervation make him familiar in the application. So much depends upon the manner of uſing external remedies, that it is a notorious fact, that thoſe ſurgeons who have been properly educated from their youth, will accompliſh a cure with the ſame kind of dreſſings which prove uſeleſs, if not pernicious, in the hands of thoſe who were never taught the right manner of applying them. A mechanical exactneſs is required; accordingly, thoſe who have a mechanical genius make the beſt dreſſers, becauſe it leads them to apply the whole of their dreſſings accurately. It is to be remarked, that though recent ulcers, ariſ-

ing from common accidents, ſuch as wounds, bruiſes, &c. will, by the force of nature, often heal, in whatever manner they are dreſſed; yet proper treatment will greatly facilitate their cure. Therefore, unleſs nature is properly conſulted and aſſiſted in the cure of chronical ulcers, not only with ſuitable dreſſings, but by attending to every point of the ſore, and to the parts about it, with preciſion, the ſurgeon will give frequent proofs that he has learned his buſineſs only in part. Nor indeed is it poſſible for him to form any true judgment of the appearance of an ulcer, without knowing the effects that different modes of dreſſing produce.

Why not to be learned in hoſpitals.

Now this kind of inſtruction is not to be expected in hoſpitals in general; though great advantages, from ſeeing a variety of caſes, and operations, may be acquired by attending them. The number of patients dreſſed in a very ſhort ſpace of time, will not

not admit of great nicety; the pupil has not time to examine them with attention and accuracy; the haſty and general manner of dreſſing will fall very ſhort of proper inſtruction; and if he has not been previouſly well grounded in judicious private practice, he will adopt a bad method of proceeding *: Of courſe proving deficient in the cure of thoſe ſores where art is required, he turns his thoughts to the uſe of the knife, where he is more likely to be ſucceſsful. Indeed, I believe a deficiency in Medico-chirurgical knowledge, has often ariſen from want of a proper initiation into the art; and I am perſuaded, this has been the ſource of more miſchief than is generally imagined; bad practice having been tranſmitted from maſter to

* Thoſe who have not had proper opportunities of receiving inſtruction, during the early part of their education, ſhould not omit ſeeing the private practice of the hoſpital ſurgeon, under whom they enter, in order to learn a proper method of dreſſing.

pupil,

pupil, by thoſe who had not been taught a judicious method, in the application of topical remedies. Otherwiſe I am certain the cure of chronical ulcers would not ſo often have been a ſtumbling block: the old ſurgeons knew how to cure them, and I have every reaſon to believe, they will for the moſt part be readily and ſafely healed, when ſcientific principles are purſued.

As the ſtudy of operations has been cultivated, the medical part of ſurgery has degenerated.

But whatever were the motives, a fondneſs for the knife prevailed, and even, in theſe days, Mr. Pott tells us *, that operations are the great and almoſt only object, which thoſe who come to the hoſpitals for improvement have in view: and I am ſorry to obſerve the ſame views too often continue, when they afterwards reſide in the country. Chirurgical writers alſo have chiefly been engaged in this

* Preface to Treat. on Fiſtul. Lachrym.

pur-

purſuit *. Inſtead of following the plan of Parey, Hildanus, Aquapendens, Wiſeman, Turner, &c. who attended to the improvement of medical ſurgery, the moſt eminent ſurgeons in theſe days confine their inquiries to thoſe complaints, where the principal part is accompliſhed by the hand. At the ſame time, ſo little attention has been paid to the cure of ulcers, which make by much the greateſt part of medical ſurgery, that Mr. Elſe, knowing the inſufficiency of modern practice, lately wrote a paper † to recal ſurgeons to the uſe of bandage in the cure of ſore legs!!! fairly evincing, that as the art gained knowledge in one part, it has degenerated in another. Nor can there be a ſtronger proof of this degeneracy, or greater marks of quackery, than the diſpoſition to believe, that theſe complaints may

* Mr. Bilguer on amputation in particular muſt be excepted. † Med. Inq. vol. iv.

be

be cured by ſpecifics; and that we have a univerſal remedy in the vinegar of lead. The principles inconteſtibly right, laid down by Parey * from the Greeks, for the topical management of compound fractures, and formerly followed by the beſt ſurgeons in Europe, are now generally neglected, or not underſtood; and our refinements too often extinguiſh the life of the patient by a deluge of matter †.

The conſequence of ſuffering the medical practice of ſurgery to degenerate, and the advantages to the ſurgeon of attending to this branch of the profeſſion.

Surely ſuffering the medical practice of ſurgery to degenerate, is diſgraceful to the ſcience, and highly injurious to ſociety. For he who omits to inform himſelf in the methods of preventing operations, will perform more than are neceſſary; and many a limb which might, I am perſuaded, have been ſaved, has been taken off, becauſe the operator had never attended properly to the art of healing. Every

* Lib. xv, cap. 24 & 25.

† See Eſſay on Comp. Fractures.

blockhead

blockhead can *amputate a leg*; but how much more praiſe-worthy is he whoſe ſkill enables him to effect a cure, and preſerve the limb? The diſcerning part of mankind will eſteem him; he will ever be diſtinguiſhed from the herd, who are incapable of giving nature proper aſſiſtance under difficulties; and his own reflections will fully reward him for the pains he may have taken, in acquiring that knowledge his profeſſion requires. Beſides, if he is well ſkilled in medical ſurgery, the event of neceſſary operations (when he is obliged to have recourſe to them) will be more ſucceſsful, from a judicious choice of proper applications. For ſuppoſing a ſurgeon to remove a ſcirrhus with dexterity from the breaſt, and to dreſs the ſucceeding ulcer with common digeſtives; by irritating, he may bring on a return of the diſeaſe, which perhaps might not have happened, if proper ſedatives

tives had been all along employed, and care taken to keep the parts about the cicatrix in a ſtate incapable of being eaſily fretted *. Or ſuppoſe the operation of trepanning to be well performed, yet if the ſurgeon does not know what kind of medicaments ſhould be uſed, to ſubdue *fungi* of the brain, and when, and in what manner, to ſuppreſs evacuations from this ſubſtance; the patient will ſometimes fall a victim to the ignorance of his aſſiſtant †. In ſhort, will not operations, however well performed, often prove abortive, if the ſurgeon has not made medical ſurgery the principal part of his ſtudy? And yet I am fearful, too many who have confined their inquiries to operations chiefly, have adopted the opinion, that nature being the curer of wounds, no external application whatever aſſiſts, farther than by keeping the parts ſoft, and defending them

* See Cancer. † See Wounds of the Head.

from

from the air; and that dry lint, and any mild ointment, are fully ſufficient for every purpoſe!

Operations uſeful, and the method of performing them readily acquired.

It however muſt be confeſſed, that manual operation often eradicates diſeaſes, which are incapable of being removed by other remedies; and it is certainly a moſt uſeful, and neceſſary branch of the profeſſion: they have done well, who have deviſed the moſt proper method of performing it; and an operator, with knowledge and ſteadineſs, is worthy of eſteem. Nevertheleſs, though ſome men have raiſed themſelves to the head of the art, by their practice and writings in this branch of medicine, yet, I think with M. de la Peyronie *, that thoſe ſurgeons who reſt their merit on the ability of performing operations *alone*, at once leſſen themſelves, and depreciate their profeſſion. By this courſe of practice, they effectually

* Preface to vol. i. Memoirs Surg. Paris.

prove

prove that their attainments in the art have been confined to a very narrow compaſs; becauſe, after all, the uſe of the knife requires but a ſmall degree of mechanical dexterity. Operations are very readily undertaken, and as readily performed, by Tyros, after a little practice upon dead bodies; and illiterate men, totally unconſcious of any one law of nature, or of any one principle in the organization of an animal frame, are equally dexterous and ſucceſsful in their operations with the knife, upon brutes. In this repreſentation, we hope to be underſtood merely as cenſuring hackneyed modes of practice; being ſufficiently aware, that diſeaſes requiring operations out of the common way, frequently preſent themſelves, where original deſign is required, and which can only be well conceived and executed by men of genius and reflection.

Society

Society would have received greater advantages from the art of ſurgery, if equal attention had been paid to the nature of inflammation, ulcers, and abſceſſes. For however theſe may appear to be ſettled, yet there is not any branch of medicine requires more correction; much leſs having been done ſince the time of Galen, than is generally imagined; erroneous principles, and bad practice, having been handed down to us, from his days, by one writer to another, and received as eſtabliſhed rules, without being ſtrictly examined.

Greater advantages would have accrued to ſociety, if more attention had been paid to medical ſurgery.

Even Wiſeman, who was perfectly capable of writing an original book, copied a farrago of medicines from Galen, or his followers, and adopted many errors, ſeemingly for no other reaſon than their having paſſed through the hands of the Greek, Arabic, and Latin writers unmoleſted. Becauſe, whenever he had reſolu-

But erroneous opinions have been copied from one writer to another.

tion enough to ſhake off the fetters of authority, his own good ſenſe, in many inſtances, flatly contradicts the very rules he had approved and laid down. And truly moſt of the books, which treat upon medical ſurgery in general, are collections of old materials, often haſhed up to ſanctify an heterogeneous practice, inadequate to the purpoſe for which it was intended.

And opinions, and rules recommended, which ought to have been rejected.

The baron Van Swieten, indeed, has collected together almoſt all that had been written upon the ſubject; but, not being a practical ſurgeon, he has received and recommended, amidſt true medical ſcience, many opinions and rules which ought to have been rejected. Nor has Mr. Samuel Sharpe, on the art of healing, in the introduction to his chirurgical treatiſe, ſhewn ſkill equal to his manner of deſcribing operations. In the one inſtance he ranſacked the works of every writer of eminence for

for information, and exhibited a clear, learned, and ingenious view of the ſubject in queſtion: in the other, as will hereafter appear, he left convincing proofs that his inquiries were not equally aſſiduous, and that his attention was principally taken up with the uſe of the knife. Had his work been ſtored with true medico-chirurgical knowledge, he would have taught us in what manner obſtinate ulcers, which are curable, might be cured.

As effects of external applications are not yet properly adjuſted.

Indeed the complaint made by Dr. Freind,* of the effects of external applications not being properly adjuſted, ſtill remains in full force; few right ſteps having yet been taken, to inveſtigate their properties. The doctrine of inflammation too, its conſequences, and cure, will admit of much improvement. For inſtance, all the books, to this day, tell us that we

* Hiſt. of Phyſic. p. 56 & ſeq. vol. i.

muſt firſt attempt diſcuſſion in every inflammation: and notwithſtanding ſuppuration comes on, we muſt forward it as much as poſſible: whereas nature herſelf proceeds with no ſuch uncertainty; and if writers would have conſulted her inſtead of books, they would long ſince have diſcarded this inconſiſtent doctrine, and have known when to have attempted diſcuſſion, and when to have let it alone*. The ancient doctrine of *laudable pus*, as it is called, being neceſſary to the cure of ulcers, is univerſally believed; yet upon inquiry, this opinion will be diſcovered to be ill founded †; and that even in many caſes, attempts to procure laudable pus, are not only unneceſſary, but injurious. The application too of digeſtives, compoſed of roſin, wax, and heating ingredients, to wounds, is ſtill in general uſe; but cer-

Inſtances of erroneous doctrines retained.

* See Treat. on Inflam. chap. ii.

† See Eſſ. on Ulcers.

tainly

tainly with great impropriety; and there cannot be any doubt, but nature for the moſt part brings on digeſtion in them, in oppoſition to bad practice. Irritating dreſſings are very frequently applied to ſores, already preternaturally irritable; hence they are injurious and repugnant to common ſenſe. Nor are the ointments commonly employed in ulcers, the moſt eligible; wherefore, without mentioning other particulars, the neceſſity of purſuing the plan ſpoken of in the preface, is obvious.

Medical ſurgery what, and the line which ſeparates medicine and ſurgery drawn.

By medical ſurgery we do not only mean external diſeaſes, where both dreſſings and internal medicines are required, but alſo ſuch complaints as are cured wholly by outward remedies; becauſe, in this inſtance, *the hand* and *external medicaments*, which ſubdue the diſeaſe by their medicinal virtues, are both employed at the ſame time. Accordingly Celſus, in his fifth book, places wounds, ulcers, in-

flammation, eryſipelas, gangrene, tumors, &c. in that branch of medicine, which oppoſes diſeaſes by medical compoſition; and very properly confines ſurgery to thoſe diſeaſes, where the principal intention is accompliſhed by the hand. Wherefore, if a line is to be drawn betwixt theſe two branches of the profeſſion, ſurgery muſt be confined to its original deſignation, *manual operation*, ſuch as making a wound, removing extraneous bodies, &c.

The practice of medicine immediately takes place, when the dreſſings are applied; and for this reaſon, the dreſſing of wounds characterized the art of healing, long before ſurgery was diſtinguiſhed by any particular name. The word *heal*, ſeems to have been originally underſtood to ſignify the healing of wounds: "*I wound, and I heal* *."

* Deuter. cap. xxxii. verſe 39 about ſix hundred years before Homer, and one thouſand before Hippocrates.

Thoſe

Thoſe, therefore, who were employed in this office, were called *healers*. Nor had the appellation of *Rauphe* among the Hebrews, *Ietros* among the Greeks, or *Medicus* among the Latins, any other meaning *. Wherefore Homer ſays †

Ιηῆρὸς γαρ ανηρ πολλῶν ανταξιος αλλῶν
Ιȣς τ᾽εκταμνειν, επι τ᾽ηπια φαρμακα πασσειν.

The Ietros is a man preferable to many others, in extracting arrows, and applying mild medicaments to the wound.

Nor can there be clearer limits of two branches of the ſame profeſſion than this paſſage deſcribes : extracting arrows being ſurgery, and the external application of remedies, phyſic ‡.

An

* Iatrike is a technical term, ſtill uſed to ſignify that branch which treats of the healing or curing diſeaſes.

† Hom. lib. xi. v. 514.

‡ It is well known the word *phyſic* is not properly applicable to any of the branches of medicine ; but, as it has been ſo long transferred from natural philoſophy to that ſcience, and is ſo well underſtood in this ſenſe,

Medical ſurgery extends itſelf into every part of medicine and prevents operations.

An inquiry then into the medical part of ſurgery, leads us from the confined views of an operator, to a more extenſive contemplation of nature and her works; a true inſight into nature being requiſite, whenever medicines are uſed. For how is it poſſible to act with propriety without knowing their powers, and the ſtate of the parts to which they are to be applied? Nor can the end of uſing medicines be any way attained (unleſs by accident), without true medical knowledge. Surely they know very little of the matter, who can ſuppoſe the duty of a ſurgeon extends no farther, in the cure of any external diſeaſe, than the uſe of his knife or plaiſter, and a manual neatneſs of bandage!

it ſeemed proper to uſe it for the ſake of diſtinction. We have alſo often uſed the word *medicine*, according to the modern acceptation, in oppoſition to the word ſurgery, though it properly ſignifies the whole art of healing.

Notwith-

Notwithſtanding, therefore, that the moderns have called the treatment of wounds, ulcers, &c. ſurgery, contrary to the direction of Celſus *; it is ſtill, and ever will be, ſtrictly the medical branch; for it is medicine, and not ſurgery, which effects a cure. He therefore who undertakes the cure of external complaints, requires now many more qualifications than Celſus has enumerated †, as requiſites neceſſary for a ſurgeon: becauſe contrary to the practice of his days, what he called ſurgery, and the branch which cured by medicaments ‡, are united; and the firſt object of the ſurgeon is now to prevent operations by *medicaments*. Beſides underſtanding anatomy and the animal

* See preface to his fifth book.

† Lib. vii. Preface.

‡ Later writers have diſtinguiſhed theſe two branches into *chirurgery* and *chirurgical operations*, ſee Aquapendens. But ſurely this diſtinction is unclaſſical.

œconomy,

œconomy, he ſhould be able to diſtinguiſh from the appearance of a wound, ulcer, tumor, &c. in what manner any of theſe diſeaſes, may affect the whole body. If he is not well verſed in the ſedative and ſtimulating properties of applications, together with the different kinds of irritability, and its conſequences; he will often be counteracting nature, inſtead of aſſiſting her. Even by the improper uſe of precipitate, and ſimilar applications, he may ſubject the patient to rigors and their effects, by increaſing the irritability of the whole habit *; and bring on a train of misfortunes, which ſkill and a proper conduct would avoid. Hence his being converſant with the ſtate of the body, the nature and action of medicines, and with what changes different kinds of medical combinations produce, is indiſpenſable.

* See Eſſay on Inflam.

Different

Different kinds of acrimony require different correctives. He muſt, therefore, be able to judge, what kind of alteration the matter in ſores has undergone, when it degenerates from health; whether it is owing to a diſeaſed habit, or a local complaint; he muſt underſtand in what manner theſe may affect each other, and what particular kind of remedies are neceſſary to reſtore the juices, &c. to a healthful ſtate; otherwiſe he will be deficient in his practice. Nor is it even poſſible for him to apply a bandage with propriety, unleſs he is thoroughly acquainted with the nature of obſtruction, tenſion, relaxation, &c. In ſhort, he ſhould be acquainted with all a phyſician ought to know; for if he cannot foretel, in general, what kind of effects will be produced upon an ulcer, &c. both by external and internal medicines, he will often meet interruption from an improper uſe of them. For inſtance

ſtance, if he does not know that purges increaſe the running of ſores, he may often bring on a flux of humors by increaſing irritability, when he intends to leſſen it; and not leſs frequently occaſion a degeneracy of a healing ſore into a bad ſtate, by an improper uſe of them. If he knows not from the appearance of a corroſive ulcer, whether mercury corrects or increaſes the diſeaſe, he may as often do irreparable injury as ſervice; and if he cannot judge from the fleſhy fibres, together with the diſcharge, what remedy is to be choſen as an antidote, he will be equally in the dark.

All this, I imagine, will be allowed me; and yet it ſeems very evident, that but little attention has been paid to theſe particulars. For is it not uſual with ſurgeons to have one common digeſtive, which they uſe upon moſt occaſions? And is not this like preſcribing the ſame purge in all caſes

and

and conſtitutions? Would any one ſuppoſe, that the cure of an exceeding ſenſible ſore had ever been in view, when the ointments in common uſe were deviſed? Is it poſſible to reflect without horror on the uſing yellow baſilicon, ſoftened with turpentine, or mixed with precipitate* to digeſt an ulcer, where the nerves are already preternaturally irritable? or, if we take a view of the conſiſtence of the yellow baſilicon of the ſhops, and of the materials of which it is made, may it not be imagined, that the ſtate of the nerves and the action of topics had never been thought upon? The black baſilicon is omitted in ſome diſpenſatories, notwithſtanding it is certain, that pitch, made into an ointment, is a powerful ſedative, and often more readily and effectually takes off preterna-

Want of attention to the effects of topics inſtanced.

* It is ſaid, "that precipitate produces laudable pus," and is therefore uſeful; but this it effects by increaſing heat, which we ſhall hereafter ſhew is not always neceſſary.

tural

tural irritability in ſores than any other remedy; and may be uſed with happy effects, where no other application can ſo properly take place.

Modern writers have improved the plan of their predeceſſors, but without extending it far enough; and topics ſhould often do more than lie eaſy upon the part.

However, in the ſurgeons books belonging to our hoſpitals, leſs irritating digeſtives than the yellow baſilicon of the London diſpenſatory are preſcribed; and the college at Edinburgh have improved this plan, by ordering their yellow baſilicon to be made with a leſs quantity of heating ingredients, and a larger quantity of hog's lard, and oil, ſo as to give it a ſofter and a better conſiſtence. It were to be wiſhed, they had alſo directed an application for recent wounds; becauſe, in theſe not only turpentine, but alſo roſin and wax are quite out of place. I have not any doubt but many ſurgeons apply ſtill milder dreſſings than thoſe in common uſe. The indiſcriminate uſe of preparations of lead, muſt often have prevented

vented the application of irritating dreſſings; and there are ſurgeons who condemn thoſe ointments, in which there is a large proportion of roſin or turpentine, or whatever irritates; and recommend emollient fomentations, poultices, and ſimple ointments in their ſtead.

There is ſome danger however, of running from turpentine and heating dreſſings, into the oppoſite extreme; and a faſhion I ſee is ariſing, of leaving nature to accompliſh her own work, under the application of inactive remedies, incapable of giving her aſſiſtance. No man is a greater advocate for ſimplicity in remedies, than I am; but *intention* ſhould at the ſame time be purſued. Former practitioners certainly did right in employing different remedies for different intentions, as the caſes might require; for though nature cures diſeaſes, ſhe muſt be aſſiſted by art, and though avoiding painful applications

tions is a main object to which the ſurgeon ſhould always attend, yet if we only have in view the choice of thoſe remedies, which by their ſimplicity, and mild diſpoſition, are incapable of giving pain, we extend our refinements too far; as ſuch practice is equally capable of doing miſchief, with attempts to ſubdue diſeaſes by ſtorm. In the one inſtance, the efforts of nature are overpowered and ſtifled; in the other, ſhe is deſtitute of help: and I will venture to affirm, that the moſt ſimple and healthful ulcer, will frequently degenerate into an exceeding bad ſtate, under the long-continued uſe of ointments made of wax and oil, poultices, or fomentations. For theſe things, by relaxing, occaſion the veſſels in the affected part, to be diſtended and overcharged; the ſtagnating juices become acrid, irritate, and inflame, and I have ſeen the worſt conſequences under this treatment.

Poultices, fomentations, &c. in ſome caſes occaſion the degeneracy of an ulcer into a bad ſtate

It

It is not always ſufficient then, that remedies are mild, and lie ſoft and eaſy upon the part; they ſhould frequently have a power as we ſhall occaſionally ſhew, of preventing inflammation, of eaſing pain, of removing obſtruction, of correcting acrimony, and of taking off that kind of irritability which emollients increaſe. For theſe purpoſes the neutral ſalts, preparations of lead, the different kinds of native balſam (either in their natural ſtate or diveſted of their heating property), warm gums, opium, the eſſential oils properly corrected, antiſeptic liniments, the application of Peruvian bark, alum, cold water, ſpirit of wine, and a variety of other things, have the preference to each other under different circumſtances; and different combinations of theſe aſſiſtants produce diſtinct and neceſſary effects.

Nor have we any reaſon to believe, that the effects of internal medicines have been

properly attended to, in the cure of external diſeaſes, when we view the contradictory methods propoſed in books, and ſee ſurgeons of the firſt eminence adviſing a ſalivation indiſcriminately, when an ulcer is difficult of cure; and purging once or twice a week to prevent it from breaking out again when healed! Nevertheleſs, we do not point out this practice to decry the medical abilities of ſurgeons in general; for in many places they act as phyſicians in ordinary, have frequently a medical education, and often diſplay a reſpectable degree of phyſical knowledge in their writings.

The objections made to ſurgeons underſtanding the practice of phyſic recited.

But it is alleged, "that an abſolute neg-
"lect of a liberal education, moſt com-
"monly happens to the generality of ſur-
"geons; which is apt to induce quackery,
"or at leaſt a narrowneſs of thinking a-
"bout medical ſubjects, and an abſence of
"that comprehenſive, and univerſal know-
"ledge,

" ledge, as well as that ingenuous caſt of " temper, requiſite to complete a phyſi- " cian *:" and I am fearful there is too much truth in the aſſertion. But, on the other hand, as ornamental learning has too frequently concealed ignorance in medicine, it may be worth while to inquire, how far it is neceſſary in the practice of phyſic. An early and regular cultivation of learning enlarges the mind, trains it up to application, gives an active diſpoſition to inquiry; and by a proficiency in languages, other ſtudies are with more facility acquired: but it does not appear from what may be obſerved, that theſe acquirements are always accompanied with an ingenuous caſt of temper; though an illiberal diſpoſition is, I think, a certain criterion of a narrow mind, and often of a want of true profeſſional knowledge. However, there is not a ſtronger recom-

* Brockleſby's Med. Ob. p. 37.

The advantages of claſſical learning, and what ſhare of it is ſufficient for the ſtudy of phyſic.

mendation to a young practitioner, than ornamental learning, becauſe few men only can judge of the medical abilities of a phyſician, but many of polite literature; and they give a phyſician credit for ſkill in his own profeſſion, if they find him poſſeſſed of this kind of ſcience. It is, therefore, an ornament every one would wiſh to wear, on account of theſe advantages, had they time to procure it. But as medical ſurgeons are early employed in medicinal practice, they very ſeldom have an opportunity of acquiring claſſical erudition, equal to thoſe who have an academical education*.

* Thoſe intended to be educated in medical ſurgery, ſhould not leave ſchool till they are ſeventeen; they ſhould afterwards engage with a proper perſon to aſſiſt them in reading languages uſeful in their profeſſion at leiſure hours, for three or four years longer; and when they begin to feel the pleaſure of extending their literary knowledge, they will not be wanting in this purſuit.

It fortunately happens, however, for theſe gentlemen, that claſſical or polite literature, and the neceſſary qualifications for a good phyſician, are diſtinct and very different things. Baglivi aſſerts, that though logic, mathematics, the various idioms of languages, rhetoric, &c. are conſiderable ornaments to the profeſſion, yet they are not more conducive to a circumſtantial and exact hiſtory of diſeaſes than the art of painting is to a muſician. And, in ſupport of this opinion, we might bring ſufficient evidence to prove, that in proportion as phyſicians have interlarded their books with paſſages from the Greek and Latin poets, medical knowledge has been wanting; becauſe the mind has been employed in contemplating the beauties of thoſe celebrated writers: and whoever takes a view of the impediments to the progreſs of medical knowledge, will often find them ariſe from ſtudying ſcience un-

connected with medicine. Accordingly Lord Bacon obſerves, " that phyſicians " have appeared to more advantage as " poets, antiquaries, critics, politicians, " divines, &c. than in their own profeſ- " ſion ;" becauſe in his time, the line of education led chiefly to theſe ſtudies.

Inſtances in proof.

No one I believe will contend that Dr. Mead was a better phyſician than Sydenham, becauſe he was a more polite ſcholar and a greater philoſopher. The reaſon is obvious ; for Sydenham was not diverted by ſpeculative reaſoning, but learned by ſtrict obſervation the nature and cure of diſeaſes ; whereas, the other was often manifeſtly led away from the proper object by purſuits foreign to his profeſſion. Therefore, though claſſical learning, &c. may be neceſſary to form an elegant writer, or a diſtinguiſhed orator, or may enable a man to appear with luſtre in converſation, yet if it is not immediately connected

nected with medical knowledge, much time may be loſt in acquiring it, which ought to have been ſpent in other ſtudies. Thoſe who are not ſo highly poliſhed, may acquire ſufficient ſkill in the art of healing, if they have a competent ſhare of underſtanding in the Greek and Latin languages, and attend proper medical ſchools, after they have learned the materia medica, the art of compounding medicaments, and their external and internal effects upon the human body. For the mind is put into action, and more enlarged, by the ſtudy of nature, than by any other kind of learning; and thoſe who practice medical ſurgery, have nature conſtantly before their eyes.

The human body is a machine *ſui generis*, that can only be explained by its own laws and principles *; the effect of medicines

The human body to be ſtudied upon its own principles; the cure of diſeaſes to be learned by clinical practice.

* As the ſtudy of phyſiology leads to hydraulics, optics, pneumatics, mechanics, &c. ſome adviſe the

cines and the cure of diſeaſes are no ways to be learned but by clinical practice. Therefore, if the mind is enlarged by the ſtudy of the animal œconomy, and that part of nature immediately connected with medicine, there cannot be any doubt but ſurgeons, of tolerable abilities, with the education ſpoken of, and the information obtained in the nature and ſeat of diſeaſes, by their office of opening morbid bodies, may acquire every kind of knowledge requiſite to the ſtudy of medicine. And though they may not be poſſeſſed of the art of perſuading, or able to

And therefore ſurgeons, without great claſſical learning may underſtand phyſic.

ſtudy of theſe, previous to the ſtudy of the animal œconomy, by way of preparatory knowledge: but, when thus employed, they have always been defective, and frequently led into egregious error. After the office of the human body is learned upon its own principles, ſo much of the other ſciences may indeed be inquired into, as ſeems to be connected with the ſubject: they will, in many inſtances, explain each other, care being taken that the foreign aid is always made ſubſervient to the object in queſtion.

diſtinguiſh

diſtinguiſh themſelves as great ſcholars, yet, as we ſhall preſently ſhew, thoſe brought up in medical ſurgery have, or may have, every advantage of information, in collecting the hiſtories of diſeaſes, and their cures, at preſent written, and of improving them by their own obſervation.

From whence a deficiency of knowledge in medical ſurgeons ſometimes ariſes.

The chief miſtake committed by medical ſurgeons, is leaving off their ſtudies juſt when they have qualified themſelves for purſuing them! Inſtead of conſidering the inſtructions they have received in medical ſchools, as an opening to the mind, and the beginning of inquiry only, they think themſelves completely furniſhed, and are content with the little ſtore of undigeſted knowledge they have gathered in a ſhort time. But, without freſh ſupplies, this knowledge degenerates, and evinces the truth of the obſervation, that the mind, like the body, unleſs it is conſtantly nouriſhed with proper food and exerciſe,

exercise, becomes feeble, and of very little use.

Perhaps some may read over the modern publications in medicine; but reading without good digestion does very little service, and often harm: the digesting of any kind of learning consists in beginning at its origin, and tracing it to its present state; for which purpose the ancients must be consulted, that the origin of practice may be known *; a collection of facts, either from observation or experiment, must be made; time and reflection exercised; a regular chain of rational examination pursued; and the result of inquiry collected and methodised: for unless this plan is adopted, erroneous opinions, crude concep-

Medico-chirurgical knowledge in what manner to be obtained.

* Suppose for instance, we were to meet with a new powder recommended for the cure of an Erysipelas: upon examining the history of this disease, we shall discover this practice to be the spawn of an ill grounded hypothesis, and a very injudicious treatment. See Erysipelas.

tions,

tions, and ſuperficial knowledge, always appear in caſes of difficulty.

The diſadvantages of the mind not being trained to thinking.

But thoſe who have not been trained up to thinking, by continual application, find it difficult, I imagine, to fix themſelves down to conſider things attentively; becauſe few ſtudy their profeſſion ſcientifically *: nevertheleſs, reſolution and perſeverance, in ſearching after knowledge, will certainly overcome this difficulty. When the mind is properly bent to a habit of thinking, it will not fly back; and aſſiduous inquiry will become a pleaſure inſtead of pain. Sydenham †, a proper example, ſpent more of his time in thinking than in reading; nor have any men living more time upon their hands, or better conveniencies for this purpoſe, than

And in what manner a habit of thinking may be acquired.

* There are many who become exceeding good ſurgeons in common caſes, without being able to extend their practice beyond a certain line: but if theſe gentlemen would view their profeſſion upon a larger ſcale, they would be ſtill more uſeful to ſociety.

† Dedicat. Treat. on the Gout.

thoſe

thoſe who ride about to ſee their patients; having frequent opportunities of obſerving facts, and uninterrupted time to unravel them. Nor do I know any method, which ſo effectually makes a long journey eaſy as reflection; and ſurely it is negligence to the laſt degree, not to employ this time (which otherwiſe muſt hang heavy), to the advantage of mankind.

Phyſicians claim the privilege of preſcribing internal medicines in all caſes.

According to the opinion of ſome phyſicians, it is not neceſſary for ſurgeons to extend their knowledge farther than manual operation, and the application of dreſſings: for they imagine all diſeaſes, both external and internal, fall properly under their cognizance; and aſſert an excluſive claim to the direction of all internal medicines. On this principle, an able practitioner, for whoſe memory I have the higheſt regard, in pointing out how far the province of the phyſician extends, ſays, "ſuppoſe a perſon to break his leg, and

" and a fever and a gangrene to enſue;
" the queſtion occurs, whether the limb
" ſhould be immediately amputated, or if
" the effects of certain remedies, given
" with a view to ſtop the progreſs of the
" gangrene, ſhould be waited for till an-
" other day? It is evidently the buſineſs
" of the phyſician in this caſe, to judge
" from the ſymptoms, from the habit of
" body of the patient, and other circum-
" ſtances of moment *, whether the delay
" is prudent or not."

Now according to this doctrine, the operation and dreſſing the wound only, are left for the ſurgeon; which is making a diviſion, or fixing boundaries betwixt the two profeſſions, that cannot any way be warranted: unleſs the phyſician takes upon himſelf the whole management of

The boundaries betwixt phyſic and ſurgery improperly deſcribed by them, as inſtances evince.

* This expreſſion carries with it the air of myſtery, which I wiſh to ſee entirely baniſhed from the practice of medicine.

the

the patient, after the operator has done his office. But ſhould he not rather have juſtified the pretenſions of the phyſician to taking the taſk upon himſelf, by ſhewing an acquaintance with the ſubject referred to? Thoſe who underſtand the treatment of gangrenes, know that there is not any queſtion in the caſe; as it cannot be right to think of taking off a leg invaded with a grangrene, whether it be local or not, while any fever exiſts. Nor is it poſſible to judge properly, whether a diſeaſe is local or conſtitutional, whether ſpreading or ſtopped, from what cauſe it ariſes, or what kind of remedies are neceſſary, unleſs from the aſpect and ſtate of the diſeaſed parts. It muſt be mere gueſswork in the preſcriber, if he does not gain information from the ſtate of the ulcer: and ſurely they muſt be the beſt judges in this matter, who have the moſt frequent opportunities of information, by conſtant and attentive inſpection.

By

By the ſame rule, phyſicians ought to determine, whether a perſon with a violent bruiſe upon the head, without a fracture, ſhould be trepanned or not. But in a caſe of this kind related by Mr. Pott*, we ſee the phyſician did not comprehend its true nature, from not having ſeen much buſineſs of this kind; and not being able to form any opinion from the appearance of the ſkull and the parts when laid bare, over-ruled the only method, when propoſed, which could poſſibly have given relief; and ſuffered the patient to die unaſſiſted, from matter being confined within the ſkull, while he was preſcribing internal remedies, from whence no poſſible good could be expected or derived †.

Again, according to the caſe ſtated, phyſicians ought to direct, whether an ulcer of long ſtanding ſhould be kept open or

* On Wounds of the Head, caſe 3.

† See a caſe in point, in injuries of the head, following.

healed

healed up: and yet it is impoſſible in many inſtances, for any man living to know whether the diſeaſe ariſes from a bad habit of body, or an affection in the part itſelf, till the veſſels about the ulcer are rendered pervious by proper applications; and our ſteps, if we chuſe to act with certainty, muſt be directed by the knowledge we gain by this proceeding. But, indeed, ulcers cannot be radically cured while the conſtitution remains bad. Inſtead of relieving, they for the moſt part are injurious to health. So far from draining off noxious humours, &c. they load the body with diſeaſe, by matter abſorbed from them; occaſion an hectic fever, eryſipelata, and thoſe abſceſſes and ulcers in the liver, and other parts of the viſcera, with which they are ſometimes accompanied. When we treat of chronical ulcers, we ſhall ſhew that they ought always to be cured as ſoon as they will admit of being healed.

But

But farther, ſuppoſe a man to have the misfortune of a compound fracture in his leg, and being ſeized with rigors, fever, and other unfavourable ſymptoms; ſome time after digeſtion has come on, a phyſician, unuſed to the dreſſing and local management of theſe accidents, is called in: in what manner is it poſſible for him to give proper aſſiſtance, when theſe ſymptoms take their riſe from confined matter, from improper dreſſings, from ſplintered bones, or a bad poſition of the limb? It is true, he may level his preſcriptions at the ſymptoms, but the cauſe muſt be removed by the ſkill of the ſurgeon; and, if he is deficient in knowledge, and depends upon help altogether from internal medicines, it is ten to one that the patient dies *ſecundum artem*, and there is an end of the matter.

A man was ſeized with an inflammation in the ſcrotum, without any ſymptoms of

plethora, but attended with pain, fever, and a large emphyſema, as often happens. His phyſician ordered repeated bleeding, low diet, purging and cooling medicines to diſcuſs the ſwelling; but a mortification came on, and the man died.

Now inflammation in the ſcrotum, attended with emphyſema, very frequently terminates in a local ſphacelus, owing ſeemingly to the ſlowneſs with which the blood moves through this appendage to the body; becauſe the mortification ſtops, when it arrives at thoſe parts where the blood circulates with more vigour. It has been obſerved to come on more particularly where large evacuations have been made; and might not this patient ſink into the arms of death, in conſequence of nervous energy being weakened by ſuch treatment, in oppoſition to the beſt chirurgical conduct?

This diviſion of the profeſſions, therefore, cannot properly take place, unleſs the

the phyſician is well ſkilled in the management of wounds, ulcers, &c. by practiſing the cure of external diſeaſes aſſiduouſly, for a proper number of years. For, without taking theſe ſteps, it is impoſſible to judge rightly about the nature of the malady, and the impediments to health; as we cannot form a true notion of thoſe things, with which we have not made ourſelves familiar: "and when there is "no certain knowledge of a thing, mere "opinion cannot diſcover a ſure reme-"dy*." A general knowledge is all that can be pretended to, by thoſe who have not practiſed ſurgery, which is commonly inſufficient for the purpoſe. Indeed, practice upon general notions, in any branch of medicine, can only be excuſed in thoſe, whoſe opportunities of experience have not furniſhed them with better knowledge. A perfect acquaintance with every

General knowledge inſufficient for underſtanding ſurgery.

* Celſus.

circumſtance in diſeaſes, and in the method of curing them, diſtinguiſhes the phyſician; and I am fully perſuaded, that a perſon who is well acquainted with the hiſtory of diſeaſes, and the effects of thoſe remedies, whoſe uſe is diſcovered by practice, will make a much better phyſician than one who preſcribes theoretically, and indiſcriminately orders medicines in the ſame claſs. Lord Bacon * obſerves, "The "ſenſe of hearing or ſeeing afar off, is "full of miſtaking; but within due di- "ſtance of the object, errs not much. So "it is with the underſtanding. For men "uſe commonly to take a proſpect of "nature, as from ſome high turret, and "to view her afar off, and are too much "taken up with generalities; whereas, if "they would vouchſafe to deſcend, and "approach nearer to particulars, and more "exactly and conſiderately look into

* Advan. Learning, lib. iv. cap. 2.

"things

" things themſelves, there might be made " a more true and profitable diſcovery " and comprehenſion. The remedy of " which error is, to go nearer to the ob- " ject; and, therefore, there is no doubt, " but if phyſicians, letting generalities go " for a while, and ſuſpending their aſſent " thereto, would make their approaches " to nature, they might become maſters of " that art whereof the poet ſpeaks,

" Et quoniam variant morbi, variabimus Artes,
" Mille mali ſpecies, mille ſalutis erunt*."

Nor is there any branch of the profeſſion to which this can be more properly applied than medical ſurgery.

It is true, when an inflammatory, putrid, hectic, or leucophlegmatic diatheſis, &c. accompanies an ulcer, the ſtate of the patient, and neceſſary treatment, may in ſome meaſure be known without looking at the ſore; yet the appearance of the

* Ovid R. A. C. 2.

Appearance of the local affection affords the ſureſt criterions to go by.

local affection will afford the ſureſt criterion, and we ſhould therefore deſcend to particulars. Theſe cannot be known, without underſtanding the aſpect of the diſeaſed parts. It is impoſſible, for inſtance, to treat an external inflammation properly, unleſs by accident, without knowing the criteria, which diſtinguiſh whether it ought to be diſperſed, or brought to ſuppuration; and theſe can only be underſtood by a familiar acquaintance with the different appearances in this diſeaſe. We ſhall hereafter ſhew*, that for want of proper attention to the knowledge that might be acquired by examining the affected part accurately, much miſmanagement has ariſen in the cure of this complaint. Suppoſe a perſon having loſt much blood from a wound, looks pale, has ſwelled legs, is feeble, and has a weak pulſe; it is no difficult

Inſtances.

* See Treatiſe on Inflammation.

matter

matter to diſcover what kind of treatment is neceſſary; but the appearance of the fibres in the ſore will beſt determine whether diet or medicine, or both, ſhould be uſed.

Indeed every ulcer is an index to the habit of body *; we even ſee into the conſtitution, and from the naked fibres diſcover health or diſeaſe, the nature of diſeaſe, and the manner in which it is likely to terminate; eſpecially if aſſiſted with well adjuſted dreſſings.

Every ulcer an index to the habit.

Great information too, is often received by the touch, which is not to be learned by words. Even the ſmell of the matter diſcharged gives knowledge, and frequently foretels, when all other ſymptoms are deficient, a diſtant but approaching death, if not prevented. The effect of medicine is moſt obvious in ſores, and a

* Witneſs the ulcer made by inoculation; ſee Dimſdale, p. 30. which we inſtance, becauſe every body knows it.

proper number of trials under different circumſtances, will determine in what kind of ſore each of them are proper, and what is to be expected from them. Wherefore the appearance of the ſore, and the ſymptoms attending it, will ever point out, to a careful obſerver, the exact ſtate of the patient; will beſt direct what internal medicine is to be choſen, and whether a combination of medicines are neceſſary. People uſed to the cure of venereal complaints, will ſoon diſcover a venereal ulcer by its aſpect; the method of cure to be purſued immediately follows; and juſt ſo it is with all other ulcers. Bark, ſteel, opium, elicampane, elm-bark, mercury, nitre, acids, lime-water, and a variety of other medicines, have been found ſerviceable in the cure of ulcers; but in what kind each of theſe are proper, words cannot deſcribe. The look of the ulcer only can determine this point; and unleſs the know-

knowledge of diſtinguiſhing one ulcer from another, and the effects of different medicines upon them, be acquired by careful attention, all proceedings are conjectural and uncertain.

Preſcribing internal medicines only in external complaints, is ſtopping ſhort; and preſcribing external remedies without ſufficient experience, injurious.

Beſides, is not preſcribing internal remedies only, in external complaints, ſtopping ſhort; for may not an injudicious ſurgeon, fruſtrate every attempt of the phyſician? Suppoſe a gangrene to be occaſioned by extreme inflammation, and the ſurgeon follows the indiſcreet doctrine of uſing in all caſes ſpirituous and heating applications; will he not increaſe the diſeaſe in oppoſition to every internal attempt to abate it? If the gangrene ariſes from acrimony in the fluids, accompanied with great irritability in the affected part, and the phyſician, along with other things, preſcribes opium; may not the ſurgeon by the common practice of applying fomentations, and turpentine digeſtives, prevent his

his intention taking place? For the one by increaſing putrefaction, and the other by inviting a flux of humors to the part, will increaſe the diſeaſe. Or ſuppoſe a perſon to have an ulcer in his leg, with ſwelling, inflammation, and pain; and the ſurgeon, from an opinion that mild and ſoft applications are proper to relieve the patient, uſes exceeding mild digeſtives, emollient poultices, fomentations, &c. I will venture to affirm, the ſore and the health of the patient will often degenerate into an exceeding bad ſtate, in oppoſition to all the phyſician can do. Nor, if the phyſician takes upon himſelf the whole management, without ſufficient experience, is he likely to be more ſucceſsful in the uſe of his applications? A farmer had a very large *ſcirrhus* on the ſide of his chin, which was become rough, unequal, of a muddy red colour, and a ſoftneſs in ſome parts of it, pointed out that the acrid

ichor

ichor underneath would ſoon corrode its way out; wherefore he conſulted a young phyſician of good abilities, in what manner to proceed. He adviſed him to take extract of hemlock twice a day, and ordered the ſurgeon, into whoſe hands the preſcription might fall, to apply a hemlock poultice daily, till the tumor was upon the point of breaking: then to cut down into it with a knife, as deep as could be done with ſafety, and to apply a mild digeſtive, compoſed of *balſam of capivi*, and *unguent. e gum elemi*, as often as occaſion required! An apothecary who had the tendons of his thumb contracted, fell down upon the pavement, and putting his hand before him to ſave himſelf, lacerated the tendons, and made a ſmall external wound. This was at firſt overlooked, but the adjacent parts ſhortly began to ſwell, and when his hand became painful, and brought on a fever, a phyſician was called in;

in; who ſeeing an eryſipelas, ordered it to be dredged with flour *, and directed at one time neutral, and afterwards volatile ſalts to be taken inwardly: after which a mortification came upon the whole arm, and the patient died. Dr. Buchan, in his noted book, tells us, that after a wound is become very *ſuperficial*, it muſt be dreſſed with the yellow baſilicon of the London Diſpenſatory. Another phyſician tells us, that ointments are always injurious in ſores, and ought to be intirely rejected from practice! In every inſtance advice is moſt likely to be equally replete with miſchief, where the preſcriber has not properly inſtructed himſelf for the purpoſe. Even from Hoffman we might bring many inſtances in ſupport of this aſſertion; and yet I am perſuaded, phyſicians have acted from a thorough conviction of doing

* See Eryſipelas.

right;

right; and, reflecting upon the enlarged underſtanding they generally poſſeſs, it is much to be lamented, that they have not made it a rule to learn by practice, the cure of external diſeaſes. Whereas they have deceived themſelves, by miſtaking *ideal* for *practical* knowledge; for opinion without practice is nothing more. It unavoidably happens, that the cure of internal diſorders is but a conjectural art; in conſequence, phyſicians bred wholly to this department, are obliged often to reaſon from ſuppoſition *; and ſome of them are hence led to content themſelves with forming opinions about the nature and cure of external diſorders, which perhaps they but imperfectly, if ever, ſaw.

* Nevertheleſs, many ſenſible men, I obſerve, leave this field of uncertainty, and tread upon ſurer ground, by learning the hiſtory of diſeaſes, and the method of curing them; and by this means our country poſſeſſes a conſiderable number of able phyſicians.

Indeed

Dividing the ſame diſorder intoſhares, an abuſe.

Indeed, I do not think a greater abuſe has ever crept into the art of healing than dividing the cure of the ſame diſorder into ſhares; it being not uncommon for the phyſician and ſurgeon to act, without deſign, in oppoſition to each other, and prevent either giving relief *. One of them at leaſt ought to underſtand the whole of the matter; for learning the cure of a diſorder only in part, carries on the face of it imperfection in practice, and muſt be deſtructive of thoſe advantages to mankind, which might otherwiſe be expected.

Not thought of by the Greeks: their diviſion rational; in what manner made, and might readily be purſued.

The Greeks who firſt propoſed dividing medicine into three parts, never thought of ſuch a glaring abſurdity as dividing the ſame diſorder into ſhares, well knowing there is no ſtudying diſeaſes by halves. Their diviſion was rational, being in practice and not in ſcience; it is the only diviſion which can take place, with any ſort

* See Examples.

of

of propriety, and would intirely put an end to thoſe inconveniencies, which muſt ariſe from the phyſician and ſurgeon having different intereſts in view. And as it has either been miſunderſtood or miſrepreſented, we will venture to explain the meaning of Celſus in this particular.

A modern writer has ſaid, "There "was anciently, as Celſus informs us, a "diviſion of medicine into three parts; the "firſt regarded the regulation of diet; the "ſecond, preſcription of medicine; the "third, manual operation. The two firſt, "though diſtinguiſhed in theory, were "always united in practice, the laſt has "been practiſed ſeparately". This account no way agrees with what that celebrated writer has ſaid; and one would imagine thoſe who give it, had never read his book, the diviſion he ſpeaks of being of a very different kind.

After

After ſhewing, that medicine had been carried on, down to the time of Herophilus and Eraſiſtratus, in an union of all its branches, he ſays, " during this period " medicine was divided into three parts, " one cured by diet, another by *medica-* " *ments*, a third by manual operation. " The firſt part was named in Greek " Διαιτητικη, the ſecond φαρμακευτικη, the " third χειρουργικη, *each deriving its appel-* " *lation from the principal method taken to* " *effect a cure*; therefore, as that method " which cures *chiefly* by diet, ſometimes " admits medicaments, ſo that which " *chiefly* oppoſes the diſeaſe by medica- " ments, ought alſo to attend to diet *." From whence it is very evident, that it was a ſeparation in the different branches of medicine, and not in preſcribing diet and medicines, which was intended: for

The Greek diviſion explained.

* This reading is taken from his general preface, and from the preface to his fifth book.

though

though they had different appellations, each ſect had the whole management in thoſe diſorders which fell properly under their care. Accordingly, if we take a view of the ſeveral chapters in which each of theſe ſubjects are treated, we ſhall diſcover that one ſet of practitioners undertook the cure of internal, and the other of external diſorders; and whether they were of that claſs which cured *principally* by diet, or *principally* by medicaments; yet each party took in every neceſſary aid for his purpoſe, both from diet and medicines. The firſt four books evince, that the dietetic branch were to have the intire management of all diſorders, which confined themſelves to the inward parts of the body, and originated internally*. The fifth and ſixth books ſhew, that the Pharmaceutiſts had the whole direction of diet

* Areteus and Celius Aurelianus confined themſelves to this line.

and medicines in all the external diſorders (which now belong to ſurgery), where the principal part was not conducted by the hand, whether ariſing from an external or an internal cauſe, being the ſect which are ſaid to have preſcribed medicines; and ſurgeons cured the wounds they had made, both by diet and medicine. Thoſe who cured internal, and thoſe who cured external diſorders, without manual operation, had the appellation of *Ietros* among the Greeks, and *Medici* among the Latins; nor was it intended that they ſhould interfere with each other in their different departments. But, notwithſtanding this diviſion has not been adhered to, each party invading the province of the other, yet it ſtill exiſts, and might eaſily be adopted with advantage to the community, under the appellations of phyſic, medical ſurgery, and ſurgery*: the apothe-

* We have uſed the word Surgery, in this place, in its primitive ſenſe.

cary

cary being the medical inſtrument-maker only, to the whole.

Parey, Aquapendens, and Wiſeman's books, among many others, are exactly upon the plan preſcribed by the Greeks, and followed by Celſus, as a proper model for the province of thoſe who practice the cure of external diſeaſes; and though it is true Parey and Wiſeman mention phyſicians, who did not practiſe ſurgery, ſometimes interfering; yet when we examine how this originally happened, we ſhall find it began in a manner no ways favourable to medical ſcience. For, unfortunately, the topical treatment of external diſeaſes fell into the hands of Barbers, who were perfectly ignorant of uſe of internal medicines; of courſe, when theſe were neceſſary, they were preſcribed, by what may ſtill properly be called the dietetic branch, who had never practiſed what we now improperly call ſurgery.

Hence *a new or ſecond diviſion* in medicine took place, though perfectly unnatural, becauſe it moſt certainly retards the progreſs of ſcience.

Nevertheleſs, there were at all times regular practitioners, educated in the whole treatment of external maladies, who complained loudly of the ignorance of the barbers; and of the ill-treatment the patient commonly underwent, from their being unacquainted with what belonged to this part of the art of healing. Hildanus, Marchettis, and many others, give us abundance of notable inſtances of this ſort. Hoffman deſcribes the German ſurgeons* as in a wretched ſtate of ignorance; nor do the ſtatutes of the College of Phyſicians, in the laſt century, exhibit a more pleaſing picture. In the form of conſulting, they ſay, "Becauſe Apothecaries and Surgeons, but eſpecially the ſurgeons, often

* Med. Polit. cap. 2.

"bring

"bring the urine of ſick people to phyſi-
"cians, and deſire they would inſpect it,
"and preſcribe for their (ſurgeons) pati-
"tients, managing under this pretence of
"conſultation, the whole cure at their
"pleaſure, and appropriate the gain to
"themſelves, while the phyſician gets no-
"thing more than the mean and hungry
"reward that ariſes from viewing the con-
"tents of the urinal: we ordain that no
"phyſician ſhall give advice to ſuch like
"impoſtures, without ſeeing the patient."

Hence it ſeems impoſſible to advance this part of the art, without purſuing the Greek plan; it being an idle dream to ſuppoſe, that a proper qualification for practice can be acquired by any other mode of ſtudying the nature and cure of external diſeaſes. Beſides, if the ſurgeon can be indifferent about the effects of internal remedies, he is dead to the intereſt of his patient, and deſtitute of neceſſary ambi-

tion, without which he can never riſe in his profeſſion. And ſome of the effects of the ſecond diviſion are theſe: an unſkilful ſurgeon may conceal his ignorance by calling in a phyſician unacquainted with the topical management of external diſorders, as he is ſure not to be excelled in healing the malady; and if the patient dies, he is ſcreened from reproach. It may be obſerved, in thoſe places, where the dreſſing of ſores, and preſcribing internal remedies, are conſidered as diſtinct offices, the ſurgeons exert themſelves in thoſe diſeaſes chiefly where the principal part is accompliſhed by the hand, where very little or no aſſiſtance from medicine is neceſſary; and where they muſt of courſe have the whole credit of the cure. But when they are concerned with phyſicians in the management of chronic ulcers, &c. they only attend to one part of the diſeaſe, and under ſuch circumſtances medical

ſurgery

ſurgery cannot do otherwiſe than degenerate.

However, in thoſe places where, from an improper line being drawn, ſurgeons do not inform themſelves in the manner of treating internal complaints, phyſicians muſt be conſulted, wherever internal remedies are required. And it muſt alſo be confeſſed that ſurgery is frequently practiſed by men of confined abilities. Others, though they are not wanting in good underſtanding, and have had a medical education, cannot confine themſelves to ſtudy, and, therefore, remain content with what they have heard in attending lectures, &c. and think it fully ſufficient if they can ſupport their practice by a theory learned in the ſchools; while too many are only anxious about performing operations, which they think the ſummit of perfection, and the high road to fame. Wherefore, ſuperviſors, or directors, in medical

Surgeons, what ſort unqualified.

Superviſors often neceſſary.

ſurgery will often be neceſſary; and thoſe who intend to aſſume this character, ſhould, in my opinion, by a proper education, both in medicine and ſurgery, qualify themſelves duly for the purpoſe *.

Who ſhould qualify themſelves properly, that the phyſician and ſurgeon may be both in the ſame man.

If they intend to confine their practice to the cure of external diſeaſes chiefly, they ſhould nevertheleſs follow the example of

* After being with a regular bred medical ſurgeon for at leaſt five years, and ſtoring the mind with plain, ſimple facts, he may in about four years more finiſh his education regularly, and take a degree: remembering the caution of Celſus, of rejecting from practice all reaſoning he meets with in the ſchools, not founded upon evident facts. Nor ſhould he be leſs careful about ſuffering the art of talking, or theoriſing about diſeaſes, to ſeduce him from an attention to practice; as has too frequently happened. I wiſh to ſee the ſtudy of medicine begin where it generally ends; becauſe, thoſe who begin in theory, too frequently let it guide them all the days of their life, continually fluctuating in practice, as new theories are manufactured and diſperſed abroad. Whereas thoſe who are at firſt trained up in wholly obſerving facts, have fixed principles to go upon, are ſteady in practice, and always judge of new diſcoveries by the reſemblance they bear to truth.

Hildanus,

Hildanus, Veſalius, Hieronymus, Fabricius ab Aquapendente, Fallopius, Scultetus, Nuck, and many other eminent men, in uniting the title of Doctor in medicine to that of Surgeon; in order that whenever an internal diſeaſe terminates in a manner that requires external aſſiſtance, to go hand in hand with other phyſicians, who may have been concerned. For though no man of ſenſe will refuſe conſulting with men of abilities and learning in their profeſſion, whether they have a degree or not, yet a line muſt be drawn as a barrier againſt the unſeaſonable intruſion of thoſe, from whom no advantage in conſultation can ariſe. Accordingly we have the pleaſure of ſeeing, that a medico-chirurgical ſociety is inſtituted at Edinburgh, of which, ſeveral of thoſe who graduate are members; who will undoubtedly remember, that ſurgery is learned, like all other arts, by experience; and that neither

ther a huſbandman nor a pilot are qualified in thoſe profeſſions by reaſoning, but by practice. Otherwiſe, we may ſay of ſurgery as Pliny ſaid of phyſic, that the ſtudy has degenerated into chattering *: and I am ſorry to ſee ſome medico-chirurgical books lately made, that cannot poſſibly teach any other art. But it is evident to common ſenſe, that in the cure of external diſeaſes, the ſurgeon and phyſician ought to be both in the ſame man. By this plan, the phyſician educated in ſurgery, will be able to direct the whole of the proceedings. When he meets with other phyſicians, who do not practiſe ſurgery, they will both be upon a footing, their proceedings muſt be a joint act, of courſe the cure or want of ſucceſs cannot be aſcribed to either alone. They will be equally intereſted in the event, a mutual

The advantages of this plan.

* Ad verba garrulitatemque deſcendente. Lib. xxvi. cap. 2.

exertion

exertion of their abilities will be a natural conſequence, and a cordial union, which it is hoped would always take place, might be of the utmoſt advantage to the patient.

It muſt at the ſame time be confeſſed, that I have obſerved an inconvenience in ſurgeons commencing doctors; as they are apt to leave off the practice of ſurgery, to riſe in dignity *, and thus give up the advantages which might accrue from the external and internal treatment being conducted by the ſame perſon. Without practice knowledge will degenerate, and they may be miſtaken in their expectations; for, by changing the ground upon which they have ſtood, perhaps, with credit, they will meet with very few oppor-

But there are inconveniences in ſurgeons commencing doctors, unleſs they ſtill adhere to the practice of ſurgery.

* The number of caſes requiring aſſiſtance is much greater in internal than external complaints, which may be another reaſon for quitting ſurgery; but the number of medico-chirurgical phyſicians would only be in proportion.

tunities

tunities of ſhewing their medical abilities. It is hard to raiſe a reputation by *practice* in that branch of medicine, where it is difficult to ſay when remedies do ſervice. The ſetting out at firſt as a phyſician, confers the credit of the character, whether a man underſtands the practice of medicine or not; but future reputation does not, for the moſt part, depend upon his knowledge in the art of healing, but upon accident; or, as Dr. Gregory aſſerts, "on the "various arts of flattery and inſinuation; "and the arts of deceiving mankind into "an high opinion of their underſtanding*." On the contrary, the cure of

* The reaſon he very properly aſſigns for this conduct is, that mankind in general cannot judge properly of the medical abilities of a phyſician; and that he is therefore obliged to gain their confidence and eſteem, by ways ſuited to their underſtanding. But, to remove this diſgrace to the profeſſion, the doctor propoſes that medicine ſhould make part of the education of every gentleman: and I ſincerely wiſh any ſcheme might take place, that art could no longer prevail over knowledge.

external

external diſorders is evident to the ſenſes. The ſtudy proceeds upon facts inſtead of conjecture; ſuperior abilities will always manifeſt themſelves without artifice, and he who diſtinguiſhes himſelf by a thorough knowledge in ſo uſeful a branch of the profeſſion, will command attention and reſpect, equal to any department in medicine. Wherefore, they who quit ſurgery to gain imaginary dignity, leſſen themſelves and their ſervices to mankind.

Phyſicians allow that the whole cure of external diſorders ought to be in the ſame man.

Now phyſicians themſelves allow, that the whole cure of external diſeaſes ought to be in the ſame perſon, by aſſerting, that it is a reflection upon them to be ignorant of external diſeaſes; and by the College of Phyſicians formerly having a bye-law, in which they inſiſted that every one of their members ſhould diligently attend the chirurgical lecture for the ſpace of five years. I imagine there are few or no phyſicians,

ſicians, who have not attended chirurgical lectures, read and thought upon the ſubject, and taken a curſory view of diſeaſes belonging to ſurgery; yet theſe are not ſufficient for the purpoſe. Inſtead of curſory views, it muſt be practically learned day by day, by as exact inveſtigations as poſſible: and though a man may have attained the art of reading ingenious lectures in ſurgery, yet if he has never practiſed it, he will know very little of the matter. In ſupport of this aſſertion, we might give many inſtances from phyſicians, who, not being guided by practice, have copied into the books they have thought proper to write on ſurgery, both good and bad treatment, without diſtinction. The College of Phyſicians, no doubt, thought they did right in publiſhing in their Diſpenſatory, ointments, cataplaſms, plaſters, &c. as remedies for the ſurgeon

to

to work with * ; yet they are moſt of them tools ill calculated for the purpoſe for which they were intended, or that cannot be uſed without doing miſchief ; and fairly evince, that without practice no good rules can be laid down.

There is ſomething in all diſeaſes which is not to be learned by words or thinking, the eye, or touch, being the chief director in our purſuit. In internal diſorders, every body knows there is a judgment to be formed upon ſight of the patient, which words cannot deſcribe. For inſtance, in external diſorders, were a cancer and a fungus, ariſing from a foul jaw-bone, to be deſcribed upon paper ; the ſame ſet of words muſt often be uſed for both of them,

But this is not to be accompliſhed without practice.

* This ſeems to have heen owing to precedent. The firſt Diſpenſatories were compiled from the writings of thoſe Greek phyſicians, who practiſed both phyſic and ſurgery; and the ſame form has ever ſince been continued, though the means for acquiring knowledge for the purpoſe has been long laid aſide.

and

and yet there is ſomething in their looks, which diſtinguiſhes them from each other and points out, to experienced and keen-ſighted men, that one of them will admit of a cure. Nor is it poſſible for any method, but the *tactus eruditus* to diſtinguiſh the difference betwixt a *ſcirrhus*, and an induration in the breaſt; and ſo on, in a multiplicity of other diſeaſes we might enumerate. Indeed, I believe it is an incontrovertible truth, that all the real knowledge exiſting, is derived from experience; and, that without practical experience true knowledge cannot be obtained. Hearing and reading, unleſs extended into practice, which converts them into real knowledge, only teach men the art of talking and writing ingeniouſly; but talking about diſeaſes, and knowing how to cure them, are diſtinct and very different things. Students in medicine muſt be allowed to be the greateſt of phyſicians, if reaſoning

For all real knowledge is derived from experience.

ing could make them ſo; whereas they have abundance of words, and very little ſkill in the art of healing. Nor is it poſſible to form a true judgment on the medical abilities of any man, till we ſee him apply remedies as exigencies require; for there are many who cannot communicate their ideas, and yet ſoon convince us, that they know in what manner to proceed upon being ſet to work; *et vice verſa.*

Why talking will not gain ſubſtantial credit in the cure of external diſeaſe.

Eloquence, or other arts of deceiving, which have often been ſucceſsful in ſome branches of medicine, will never gain credit in the management of thoſe diſeaſes, where the nature and cure are evident to the ſenſes. Something ſubſtantial and convincing muſt be done; for without a cure is obtained, an obſtinate ulcer (for inſtance) will remain a mark of unſkilfulneſs in the preſcriber, unleſs the blame falls upon the dreſſer, or the phyſician ſucceeds in perſuading the patient that he ought not to

think of being cured for fear of being killed. Or ſhould he eſcape cenſure from having acquired the character of a man of great learning, ſkill, and ſagacity, in the cure of internal diſorders; yet, however this may prevail with other people, he ought not to ſuffer it to deceive himſelf, by ſuppoſing that he underſtands the nature of complaints he has not properly attended to. Nor is it ſufficient that phyſicians and ſurgeons of eminence, who have only ſtudied external diſeaſes in part, from unconnected meetings*, countenance each other and eſcape cenſure in an unſucceſsful caſe with impunity, if a thorough

We ſhould not ſatisfy ourſelves with eſcaping with impunity, if more could have been done.

* Hoffman indeed, laid it down as a rule, Med. Polit. cap. 2. regul. iii. that the phyſician ſhould not enter into too much familiarity with the ſurgeon. But unleſs the plan I have adviſed is purſued, ſurely no men living ſhould be more open to each other in communicating their intentions, that they may both proceed upon the ſame plan; for without there is a perfect union in opinion, the patient is moſt likely to be a ſufferer, where each takes only the management of part of the diſeaſe.

acquaint-

acquaintance with the ſubject might have produced a more favourable termination of the diſeaſe. We muſt, therefore, repeat what has been ſaid in other words, that every phyſician, who preſcribes in external diſorders, ought to be a good ſurgeon; and that every ſurgeon ought to be a good phyſician; that the nature of external diſeaſes can only be learned by conſtantly ſeeing, and examining them thoroughly; and that the method of cure will not be underſtood but by curing them, and by ſtrictly obſerving the alterations which happen from diſeaſe, or nature, and the effects of medicine; that we may determine how far particular remedies are aſſiſting in the cure. The experience of other men will not ſupply the want of our own obſervation; for even facts muſt be tried, and paſs through our own thoughts and experience, before they can be of much

The methods of acquiring proper knowledge in chirurgical caſes enumerated.

uſe to us. Sir William Temple obſerves *, "though a man may grow learned by "other men's thoughts, yet it is from his "own thoughts as well as experience that "he will grow wiſe."

Should phyſicians think the knowledge of dreſſing ulcers unneceſſary, they will find themſelves miſtaken; it leads to a more familiar acquaintance with the diſeaſe, and the very manner of dreſſing with the ſame remedy will often either forward or prevent a cure. For inſtance, in many habits the epulotic cerate, though properly prepared, ſpread thick, continues the running of ſores; whereas when it is ſpread thin upon lint, and ſuffered to dry before it is uſed, it frequently heals them. Digeſtives are often neceſſary to promote cicatrization, but ſometimes their being ſpread thick, and ſometimes thin, is required; otherwiſe the cure will not advance.

* On Health and Long Life, p. 267.

vance. Different degrees of preſſure produce different effects; one kind prevents inflammation, another occaſions it; one promotes digeſtion, another ſuppreſſes it; one occaſions pain, another eaſes it, &c. If a roller is not properly wrapped up, it cannot be well applied, and the patient will receive no benefit where the cure depends on bandage. Nor are innumerable other inſtances wanting to ſhew, that whatever remedies are beneficial in ſores, become ſo by a right uſe of them. If a phyſician cannot point out where the fault lies, when the cure does not advance, he may preſcribe to eternity without ſucceſs, if his aſſiſtant happens not to be an adept in dreſſing of ſores, and has not attended to the different effects that may be produced by the ſame remedy differently applied: unleſs, indeed, in thoſe caſes which ſometimes happen, where nature will effect

The manner of dreſſing under different circumſtances neceſſary to be known to the phyſician who undertakes to preſcribe in external diſeaſes.

a cure, in oppoſition to every blunder that can be committed!

Hoffman in one of his rules ſays, "A "phyſician ought not to perform any "common operation; ſuch as making a "future, applying a plaiſter, &c. becauſe "it is beneath his dignity." It is ſaid ſome modern phyſicians value themſelves upon their ignorance in ſurgery, for the ſame reaſons. But can ſuch conſummate pride ſupport the dignity of any profeſſion? Did Hippocrates think theſe offices beneath his dignity, which was in knowledge, and not in outward pomp; and does not the dignity of a phyſician conſiſt in humanity, honeſty, and a thorough acquaintance with the ſcience he profeſſes*? Surely, affording relief to the diſtreſſed by any means, is an act of humanity; and in what manner acts of humanity can leſſen

Some phyſicians value themſelves upon their ignorance in ſurgery, on account of their dignity; but upon miſtaken notions.

* Hippocrates ſays, he ought to be an honeſt, diligent, ingenuous man.

a man's

a man's dignity, I am at a loſs to conceive: Celſus eſteemed him moſt, whoſe knowledge was moſt extenſive. I am of opinion with Dr. Gregory, that it is ridiculous in a phyſician to think any attentions, or any duties, below his dignity, which can contribute to the relief of his patient. I am perſuaded this miſtaken pride can only be an air of pompoſity in ſome few men, who wiſh to appear great, with confeſſedly limited underſtandings.

Beſides, is not medical ſurgery equally noble with any other branch of medicine, and more certainly uſeful as its effects are more evident? In internal diſeaſes it is often hard to ſay, whether the diſeaſe is cured by medicine or by nature, in oppoſition to bad practice. But in external diſeaſes the effects of proper treatment are obvious, and, being eaſily underſtood, have not been ſo greatly admired as thoſe things which are covered with darkneſs. Never-

Surgery equally noble with any branch of medicine, and evidently uſeful.

Why not in equal eſteem with the treatment of obſcure diſeaſes.

theleſs, the method of curing external diſeaſes, even by external remedies, is a friendly hand-maid to nature. It does not derogate from the art itſelf, that thoſe advantages have not been derived from it that might have been; or, that it has been practiſed by barbers and illiterate men. Every branch of medicine has had the ſame misfortune, of falling into the hands of thoſe who did not underſtand it.

A friendly hand-maid to nature, and no way leſſened by the hands it has been in.

Phyſicians of the firſt eminence agree, that the knowledge and cure of external diſeaſes is a maſter-key to the ſtudy and practice of medicine. Boerhaave, and his very learned commentator the Baron Van Swieten*, endeavoured to inculcate this opinion in the minds of their pupils, and taught what belonged to external maladies as a clue to medical knowledge, not to be obtained in any other department of medicine; it being the beſt method of learning,

Phyſicians allow that ſurgery is a maſter-key to the ſtudy of phyſic.

* Com. ſec. 144.

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to paſs from thoſe things which are eaſy to comprehend, to the more difficult: and external diſorders being moſt obvious to the ſenſes, and moſt readily underſtood, eaſily lead us to a knowledge of the ſame kind of diſeaſes, when ſeated inwardly. "We can much more evidently underſtand "external inflammations, and their various "ways of terminating, than thoſe ſeated "internally. How much light we receive "about the nature of obſcure diſeaſes of "the head, from a knowledge of wounds "of that part! And the ſame is true of "many other complaints." "We may "juſtly lay it down (ſays he) as an axiom, "that internal diſeaſes exactly correſpond "with ſuch as are external; *and that no-* "*thing regular or juſt can either be per-* "*formed or taught in the practice of phyſic,* "*unleſs the external diſeaſes appertaining to* "*ſurgery be firſt thoroughly conſidered.*" The Baron has not omitted to lay before

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us proper analogies on this occaſion*; and of the ſame opinion are numberleſs able phyſicians of our own country †.

Hippocrates of this opinion.

Hippocrates formed many of his notions, and much of his practice, in the cure of internal diſeaſes, from what he obſerved in thoſe ſeated externally. In particular, he rationally taught the nature and cure of pleuriſies, peripneumonies, and the like, from wounds of the breaſt. When ſores were over-loaded with a flux of humours, purges were given to unload the habit, and make a derivation from the affected part; and the effects in theſe caſes naturally extended the uſe of ſuch remedies in every kind of inflammation and plethora. Is not the analogy of external and internal diſeaſes obvious? A man is ſeized with violent pain in the abdomen, accompanied with a hard full pulſe, a fever, coſtive-

* Sect. 557.

† See Dr. Barry, Dr. Miller, &c.

neſs,

neſs, &c. whence we conclude, that the affected parts are inflamed. If the pain gradually decreaſes, a recovery is foretold; but if the patient enjoys ſudden eaſe with a weak low pulſe, we judge that a mortification is come on, and that death is at hand: and whence do we learn this knowledge, but from external inflammation, and the ſymptoms attending its different terminations? A local inflammation is attended, more or leſs with a fever, and a quick pulſe. In a *tetanus** from an uninflamed ſore, the pulſe is quiet and no fever appears; which leads us to diſtinguiſh, upon certain grounds, betwixt inflammatory and ſpaſmodic diſeaſes, when ſeated inwardly; and what remedies are to be choſen for the cure. If a man is ſeized with a pain in his ſtomach or bowels, has a quick pulſe and a fever, we immediately know, upon touching the patient, that his diſeaſe ariſes Inſtances.

* See Diſſ. on the Symp. of the Nerves.

from

from inflammation, and that the antiphlogiſtic treatment, in a greater or leſs degree, in proportion to the ſymptoms, muſt be purſued. On the contrary, if his ſkin is temperate, and no ſymptoms of fever appear, it is clear the pain is owing to flatulency, ſpaſm, or ſome indolent obſtruction unattended with inflammation*; accordingly antiſpaſmodics, warm purges, the eſſential oils, or deobſtruents, &c. are given with ſucceſs. The ſame may be ſaid of pain in the ſide: and in a fit of the gravel we can never proceed regularly, unleſs we attend to theſe particulars. If the vomiting, nervous colic, and pain in the back and groin, are accompanied with a fever, inflammation is preſent, and bleeding, with the cooling plan, take place; but if the pulſe is quiet and no fever appears, tincture of ſena, joined with ſpirit of nitre, opium, and marſhmallow tea, tur-

* See Treatiſe on Inflam. in general.

pentine

pentine clyſters, and ſuch kind of remedies afford more immediate relief. Lacerated wounds of the brain are often, if not always, accompanied with a ſoft, open, unaffected pulſe; whereas when the *dura* and *pia mater* are inflamed in a ſtate of tenſion, a fever and a quick ſerrated pulſe are the conſequence. We may conclude from hence, that in deep-ſeated pains in the head, and in comatous fevers with a good pulſe, attended with deliriouſneſs, rapid loſs of appetite and ſtrength, ſleepleſſneſs, quickneſs of breathing, and thirſt; the diſeaſe is ſeated in the ſubſtance of the brain: and that the membranes of the brain are inflamed when the pulſe is ſerrated and quick, and the ſymptoms of *phrenitis* appear. In injuries of the brain, have we not *ocular demonſtration*, that an *hemiplegia* on the oppoſite ſide is a conſequence. The effect of long-continued inflammation upon the outward

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membranes, the ſurgeon *ſees* to be unavoidable ſuppuration; which points out the neceſſity of a ſpeedy removal of the diſeaſe when the inward membranes are inflamed, to avoid this conſequence, which in ſuch a ſituation will often prove fatal. In inflammation of the lungs and pleura, where the diſeaſe often terminates by expectoration, does not the practice of ſurgery clearly inſtruct when to uſe evacuations, and when to let them alone? While a wound is in a ſtate of inflammation, bleeding, antiphlogiſtics, cooling purges, and the like, are proper; but when digeſtion comes on, and we ſee the inflammation is abated, ſuch remedies are no longer neceſſary: and does not this hold good in the inward diſorders of which we were ſpeaking? For antiphlogiſtics are proper till expectoration comes on; they then become improper, and * inward di-

* We do not mean by digeſtives the common heating remedies; but thoſe things, which by an emollient quality promote a diſcharge.

geſtives

geſtives finiſh the cure. When the abdominal viſcera are inflamed, is not the cure accompliſhed by the very ſame means which remove external inflammation by diſcuſſion? It has long been known that the matter in abſceſſes is ſometimes ſuddenly taken up by the abſorbents, and carried ſafely out of the body; which has induced ſurgeons *, under particular circumſtances, to promote this abſorption by briſk purging in ripe abſceſſes, and to cure their patient without an enſuing ulcer. Does not the ſucceſs of this practice point out that there may be ſome hope of relieving abſceſſes in the head, thorax, or abdomen, by this treatment, where an operation for various reaſons cannot ſometimes take place?

In ſhort, the ſame kind of diſeaſes happen to the inſide as to the outſide of the body. It is allowed a *phrenitis* is a phleg-

The ſame kind of diſeaſes happen to the inſide as the outſide of the body.

* Deaſe's Surgery.

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mon or eryſipelas of the brain, or its membranes; a pleuriſy, a phlegmon or eryſipelas of the pleura; and a peripneumony, a phlegmon or eryſipelas of the lungs. When the liver and ſpleen, ſtomach or inteſtines, &c. are inflamed, they muſt be affected in the ſame manner; and though ſome peculiar ſymptoms may ariſe from the ſtructure and ſituation of theſe different parts, yet the inflammation in each of them requires ſimilar treatment with external inflammation; and, though it affects different organs, ought to be conſidered as one kind of diſeaſe.

Scirrhi of the liver and ſpleen, or other internal glands, are of the ſame nature with ſcirrhi in glands ſeated externally; inward ulcers are of the ſame kind with external ulcers: and how is it poſſible to treat the former with propriety, unleſs we are previouſly inſtructed in the nature of of the latter? A phthiſis ariſes from an ulcer

ulcer in the lungs, and this ulcer from a tubercle. It is well known that theſe tubercles, and the ſwelled glands in the meſentery, which occaſion an atrophy, are of the ſame nature with thoſe formed in the necks of ſcrophulous people: and ſurely by ſeeing the progreſs of the external diſeaſe, and what effect medicines produce in the method of cure, we muſt be fully inſtructed in its conſequences when ſeated inwardly. For it is not material whether matter is abſorbed from an external, or internal ulcer; as a colliquative or hectic fever, according to its nature and degree of virulence, will be the conſequence: and in every ulcer, the ſame kind of reaſoning holds good. Nor is the analogy of external and internal diſorders confined to local complaints; for we have better information in regard to the nature and action of contagious *miaſmata* from external diſorders, than is to be gathered from any other quarter.

In inoculation we are led to conclude, that contagious *miaſmata* are equally ſubtile with the ſcent of a roſe; becauſe we diſcover, that even a variolous atom produces the ſmall-pox. By the moſt active kind of putrid matter being abſorbed from ſores, we are taught what effects putrid *miaſmata* will produce in the body, in whatever manner they are received; and what methods are moſt likely to correct their miſchievous effects. The ichor ariſing from corrupted blood, or putrid fleſh, is a moſt active poiſon. We ſee it corrode and inflame the parts with which it comes in contact; and being abſorbed, it irritates the nerves, brings on a fever, weakens, or deſtroys nervous energy, diſſolves the craſis of the blood, and, if not prevented, a total corruption follows, as the progreſs of gun-ſhot and other contuſed wounds has ſo often evinced. The cure of theſe accidents has ſurely thrown great light on the

uſe

uſe of antiſeptics in putrid fevers; and by ſuppoſing putrid matter to be more active and volatile than that deſcribed, we ſhall not be at a loſs to account for the gaol-fever, and other diſtempers of the ſame kind.

A poiſoned arrow evinces how ſmall a quantity of matter will have an immediate and deadly influence, by acting upon the nerves. And from this extreme ſedative power a field of inquiry preſents itſelf, in which we may be led to a curious inveſtigation of the power of different ſedatives. The *miaſmata* occaſioning the ſore-throat fever, which lately prevailed in this place*, apparently deſtroyed the patient by their ſedative and deleterious property, without one ſymptom of putridity attending: and I have ſeveral times met with a fever without either efflorescence, or ſore-throat, in which thoſe who died had every ſymp-

* See Treatiſe on Eryſipelas.

tom of nervous energy being deſtroyed; and thoſe who recovered were enabled by wine, or other cordials, to ſtruggle through the diſeaſe. Sores alſo teach the difference betwixt inflammatory and ſpaſmodic irritability; and ſet us upon proper ground to ſee in their right light the whole train of nervous diſeaſes, and their method of cure. Air, diet, water, and ſituation, manifeſt their effects remarkably in ſores; and, if we except mental diſeaſes, there are none that I know of, which may not be illuſtrated by one part of medical ſurgery or other: and an ulcer even diſcovers to us, how far theſe will affect the body. It has long been the opinion, to the deſtruction of thouſands, that a fever is an effort of nature; and ſo long as we reaſon from conjecture, much may be ſaid in favour of this axiom, cunningly invented by Aſclepiades, to ſupport a bad practice. But ſurgery diſcovers its fallacy; for ſuppoſing

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an ulcer to be in the moſt healthful ſtate, diſcharging good matter, and filled with ruddy granulations of new fleſh; if a fever by any accident invades the patient, the ulcer becomes dry, or diſcharges a gleet inſtead of good matter; the fibres become pale and gloſſy, and evince that every effort of nature is ſuppreſſed while the fever exiſts. Nor can any thing be clearer than that fever interrupts nature, becauſe ſhe reſumes her office of reſtoring the ulcer to a healthful ſtate as ſoon as it diſappears.

Dr. Freind* ſays, "If the effects of "outward applications were properly ad- "juſted and explained, nothing would "give greater light into the virtues and "operations of internal medicines:" and this, experience might daily evince. We have mentioned that a balſam compoſed of pitch, &c. has a powerful ſedative pro-

The effects of outward applications throw great light upon the uſe of internal medicines.

* Hiſt. of Med. vol. i. p. 73.

perty in particular ſores; and a man, troubled with a violent nervous aſthma, received the greateſt relief by accidentally taking ſome of this remedy. Knowing its power by external application, we afterwards recommended its uſe occaſionally, and, in conſequence, the man enjoyed more eaſe for ſeveral years, during the remainder of his life, than he had for a long time experienced. Hence we ſee in what caſes, and in what manner tar-water proved ſerviceable; but as the internal uſe of it could not ſo clearly point out its mode of action, it was indiſcriminately uſed in all ſorts of diſorders: the conſequence was, that from its frequent failure of ſucceſs, it ſunk into diſuſe. Myrrh (beſides its antiſeptic property) has a power of allaying irritability, when ſprinkled in ſores unattended with inflammation; and does not this point out to us how it comes to paſs, that nervous coughs, under the ſame predicament, are

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ſo certainly and effectually cured or relieved by it? Balſam of Peru is a ſedative in ſores unattended with heat or inflammation; but where heat or inflammation prevails, it occaſions violent pain: if, therefore, it was given in an inflammation of the bowels, would not it produce the ſame effect? Whereas in the nervous colic, or ſpaſms of the viſcera, it is often attended with the moſt deſirable ſucceſs. Eſſential oils take off irritability in ſores under the ſame predicament; and, in all likelihood, produce their good effects by this means upon the nerves of the *primæ viæ*, when mixed with purges, or when taken inwardly for pains in the ſtomach and bowels, nervous or chronic rheumatiſm, &c. Oil of turpentine has often been known to eaſe pain unattended with inflammation, when outwardly applied; and it is probably owing to this ſedative power, that turpentine clyſters give ſuch immediate re-

lief in fits of the gravel, where no inflammatory ſymptoms appear; whereas all ſedatives having an irritating property, it increaſes the inflammation of wounds: and would it not in like manner increaſe nephritic ſymptoms, when accompanied with heat, taken inwardly? Rhubarb gently increaſes the flux in ſores, cleanſes them, and renders them leſs irritable; and are not its ſalutary effects in diſorders of the bowels owing to theſe properties? Bark, applied to ulcers, corrects putrid acrimony, ſtrengthens weakened fibres, and reſtores them to natural ſenſation when feeling is unnaturally acute: and it is probably owing to all, or ſome of theſe qualities, that ſo many good effects are experienced from its uſe. It is well known, the *ſiphylis* is corrected in ſores by mercury; and is not the ſame remedy an antidote to the venereal virus when taken inwardly?

In this manner we might go on through the whole materia medica, ſhewing that the outward effects of remedies lead to the internal uſe of them: and the fleſhy fibres being expoſed, frequently diſcover to us what effects medicines produce in the body. Suppoſe an ulcer to be in a healthy healing ſtate, and an ounce of ſalts to be given: inflammation about the ſore ſoon follows, the diſcharge, which becomes thinner or more watery, is increaſed, and by looking upon the fibres with a glaſs we ſee they are in a crude and ragged ſtate. From this inſtance we learn, that the effects of ſuch kind of purges are not confined to the inteſtines, to making an evacuation of ſerum, or to the occaſioning a higher excitement of nervous energy; but they traverſe the innermoſt receſſes of the body, irritate every order of veſſels, promote a circulation through them, and thus render them pervious. It is from theſe effects

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that purges are ſo very ſerviceable in bruiſes; and we find out how it comes to paſs, when a diſcharge from the urethra (for inſtance) is ſuppreſſed, and brings on a ſwelling in the neighbouring parts; that relief is procured by ſuch remedies. We plainly enough ſee by the ſtate of the fibres, what kind of purges extend their effects farther than the alimentary canal, what kind confine their action to this bowel, and the manner of giving purges to make them anſwer different purpoſes. The action of different kinds of ſudorifics is pointed out in ſores; and it is evident, from their being fretted, that though emetics are prevented by opium from acting on the nerves of the *primæ viæ*, ſo as to occaſion vomiting, that they irritate the whole ſyſtem, and thus evacuate by perſpiration. Indeed, the viſible effect of vomits and purges in ſores ſeems to prove, that whatever irritates the *primæ viæ*, irritates the whole ſyſtem: and

and would any one have ſo clearly known the deobſtruent powers of emetics, that they promote abſorption, and extend their effects to the remoteſt parts of the body, had we not ſeen them reduce ſwellings in the extremities, and in ſeveral of the external glands? Mercury is known to paſs the minuteſt veſſels, by its being diſcharged upon plaſters, wherever the cuticle is removed; but not in globules as ſome have repreſented. A man had occaſion to take mercury on account of a pain and eruption of long ſtanding on his head. I ordered him four grains of quickſilver, made into pills with ſtarch and water, twice a day; and a perpetual bliſter was at the ſame time applied to that part where the pain was greateſt. He took half an ounce of purging ſalts once a week, but in other reſpects lived in common with his aſſociates; yet, in leſs than a month, the inſide of the dreſſings were daily covered with a

blueiſh

blueiſh ſmut; and knowing that even calomel returns to its priſtine ſtate in the ſtomach*, it appeared evident that the alteration the mercury had undergone was owing to its paſſing the circulation. The fluids with which it mixed in its paſſage were alſo probably altered, and the mode in which it was diſcharged ſhews that it enters the ſmalleſt veſſels. Beſides, when applied to ulcers it irritates; and we have ocular demonſtration of its thinning the juices in particular habits of body. A woman, fifty years of age, had a putrid ulcer upon her leg. Her ſurgeon gave her mercury, upon which it ſpread, and became more putrid; but upon bark being taken, by other advice, it grew cleaner, and put on a more healthful appearance. Unluckily, however, mercury was again adminiſtered; the ulcer ſpread again, and the acrimony of the fluids, which drained

* See Diſſer. on the Nerves.

into

into the ſore, was ſo very great, that they deſtroyed all the parts with which they came in contact. The bones were laid bare, the tendons were all diſſolved into rags, and the ligaments of the ancle-joint, being in the ſame ſtate, could no longer hold it together; and all this under an attenuated ſtate of blood! I then firſt ſaw her, applied antiſeptic dreſſings, and gave her the bark with elixir of vitriol, which in time reſtored her to ſuch a ſtate, that ſhe bore the loſs of her leg, and recovered her health. Do not theſe facts reflect light on the uſe and abuſe of this excellent mineral *, at the ſame time, that they point out the different effects of bark and mercury?

The effects upon the ſolids and fluids are alſo plainly ſeen in an ulcer, when a variety of other medicines are given. A woman, about fifty years of age, of a leu-

* See Venereal Ulcer.

cophleg-

cophlegmatic habit, had an ulcer upon her leg which diſcharged clear water; and the fibres looked exceeding pale and inactive. She was ordered to take ſteel-wine twice a day, in chamomile tea, and her leg was dreſſed with dry lint, kept on by a ſoft plaiſter; by this ſimple method the invigorating power of the ſteel was clearly perceived, as new granulations and good matter ſhortly appeared, and ſhe recovered without farther trouble. As we go on, we ſhall have occaſion to mention many other inſtances, where ſurgery gives ocular demonſtration of the internal effects of medicines; but theſe are ſufficient for our purpoſe. And what can be more neceſſary in the practice of phyſic than a true knowledge of the nature of diſeaſes, and of the virtues and operations of medicines?

However, this is not all the knowledge external diſeaſes afford to medicine; for they have ſet before us ſome parts of the animal

animal œconomy in its true light. Injuries which deſtroy the brain, or evacuate all the blood from the body, teach us, that the vital principle reſides in the blood and brain; that neither of them alone can preſerve life; and conſequently, that health is maintained by a regular action of both in a ſound body. Wounds or ruptures of the heart ſhew its importance to life, and a wound in the thoracic duct, upon diſſection, has, according to Lower, *De Corde**, demonſtrated the paſſage of the chyle to the blood. Has not the hiſtory of a wound in the gall-bladder†, taught us the office of the bile; and ſhewn, that fluids extravaſated into the cavity of the abdomen, find a paſſage immediately into the urinary bladder? Tumors in the ducts leading to,

* P. 154. edit. 4to. See alſo Van Sw. Com. vol. ii. p. 116.

† Philoſ. Tranſ. N°. 414. p. 341; or, Miles's Abrid. vol. ii. p. 212.

or

or coming from, the liver, not only inſtruct us in the uſe of this gland, but the nature of one kind of jaundice, that the liver is the ſeat of this complaint: and we have ſometimes, in external diſeaſes, ocular demonſtration of the effects which bile produces when it gets into the blood. A man had an ulcer in his groin, which was cured, and ſome time afterwards he was ſeized with the jaundice, became exceeding yellow, the ulcer broke out again, and diſcharged a yellow matter; but upon the jaundice being removed, the diſcharge ſoon altered its colour, and the patient was cured without any farther trouble: from whence we may infer, that the doctrine of thoſe who aſſert, that there cannot be a *materia morbi* in diſeaſes, is falſe; and that the fluids, while circulating in the blood-veſſels, may poſſeſs matter capable of occaſioning eruptions, ulcers, and a variety of other complaints. We learn, moreover, that

that great acrimony may exiſt in the blood, without occaſioning much injury, if it meets with no obſtruction; but if intercepted in its paſſage, it may deſtroy the veſſels in which it is confined. In the caſe juſt recited, the veſſels of the cicatrix probably did not give a free paſſage to the juices loaded with bile, wherefore it deſtroyed them: and does not this lead us to imagine, that, in ſome inſtances, active deobſtruents, given with a view to remove obſtructions of the viſcera, may produce a ſimilar effect, and deſtroy the patient? On the other hand, the diſſolution of the cicatrix diſcovers to us how it comes to paſs, that chlorotic girls are ſo often cured by the coming on of a jaundice: for it is eaſy to conceive, that the bile, by its irritating and diſſolving property, may render the whole ſtate of the veſſels pervious, and thus reſtore health; and that ſimilar deobſtruents may frequently be given with advantage.

Did not the paſſage of the venereal virus from the urethra to the glands in the groin, lead Dr. Hunter to adopt and ſupport the opinion of the lymphactics being an abſorbent ſyſtem*? And it is well known, that the abſorption of matter from ulcers, and the inoculation of the ſmall-pox, have eſtabliſhed the truth of this doctrine. An emphyſema following a fractured rib, in part demonſtrates the ſtructure of the cellular membrane. The incarnation of wounds gives great light into the nature of animal fibres, their diſeaſes, and the means of reſtoring them to health. Fractures of the bones, accompanied with a wound, and loſs of ſubſtance, point out the mode of oſſification; and, indeed, there is

* It was truly, I think, a diſcovery, becauſe what Hoffman (Med. Ret. Syſtem, lib. i. ſec. 2. cap. 3.) and others had advanced, was no ways underſtood till after the Doctor had wrote or read lectures upon the ſubject. It is ſaid, he took the hint from Freke, on the Art of Healing, p. 199.

ſcarcely

ſcarcely any thing which paſſes in the body, either in ſickneſs or in health, which external diſorders or accidents do not, if attended to, more or leſs explain. Surely then, thoſe ſurgeons are highly blameable, who overlook ſuch opportunities of information! The objects before them are the moſt obvious, and plain road to truth; and if, when inſtructed in anatomy, phyſiology, and medicine, they have the happineſs of being ſpurred on by a genius capable of diſcerning and purſuing the hints of nature, they cannot well fail of being uſeful to ſociety. This is the direct road to uſeful knowledge; and the mind, when thus aſſiſted, ſtands in need only of exerciſe to increaſe its ſtrength, and to extend its powers to any purpoſe for which it may be wanted.

Why the fertile genius often fails in advancing ſcience.

Indeed, thoſe whoſe minds are mechanically actuated by inſtruction, are often fired with the ſtudy of medicine; they ſeldom

fail to make themſelves acquainted with prevailing opinions, and are capable of haſhing them up occaſionally into different forms. Even the fertile genius, who ſcorns to think or act like other men, and often delights and aſtoniſhes us with ingenious conceits, if he does not attend to the light which nature offers, his wild theory oftener detracts from, than adds any thing to, the ſtore of medical knowledge; becauſe his opinion is the brat of invention, inſtead of being the legitimate offspring of nature. Whereas an obſerver of nature thinks not of *inventing* opinions, but of unveiling the ſources of all true knowledge.

That our meaning may not be miſconſtrued, and more clearly to evince the truth of the doctrine advanced, we will give a few *examples* out of many that might be collected, in proof of the neceſſity of making the practice of medical ſurgery a part of

of the education of thoſe, who intend to preſcribe in external diſeaſes. Without taking this ſtep, we ſhall ſee how impoſſible it will be for any one, though his claſſical and medical learning be *otherwiſe* great, to exert every advantage the art affords: and we have not any doubt, but theſe hints will be well received by ingenuous men, whoſe underſtanding the luſt of power and wealth has not miſguided; who know that it is a proper application of remedies which cures diſeaſes; and whoſe good ſenſe directs them to reject all reaſoning which is not founded upon evident facts. The ſurgeon alſo will be aware of the want of a regular education in his art, of the neceſſity of ſupplying it by induſtry, and learning the private practice of ſkilful men.

EXAMPLE I.

A young gentleman, after a more liberal education than common, was bred an apothecary; but being afterwards deſirous of qualifying himſelf for the practice of ſurgery, attended an hoſpital, and other places of inſtruction, more than a year in London; and then ſpent two winters in the medical ſchools of Edinburgh. At both theſe places he took uncommon pains, was a man of exceeding good ſenſe, very ready in diſcourſing ſenſibly upon any part of his profeſſion; and the Edinburgh theory of diſeaſes, and their cure, flowed ſpontaneouſly from his tongue. Yet being called with me to a caſe in ſurgery, he fairly confeſſed he had not learned his buſineſs: for ſays he, "Though I can per-
"form operations very well, and manage
"recent wounds, &c. where nature, I am
"convinced, will overcome many obſtacles
"to a cure; yet in *ſtubborn chronic* caſes,
"I am

"I am always at a loſs." I ſaw he had a ſlovenly way of dreſſing his patient, without any intention of aſſiſting nature by his manner of application; and that he was a novice in the proper uſe of bandage. He was told, that his want of ſkill aroſe from not being properly trained up *to the art* of ſurgery; and, that he had been more attentive to the theoretical than to the practical part of his profeſſion. His good ſenſe readily took the hint with advantage, and we hope, others in the ſame predicament will follow ſo commendable an example.

EXAMPLE II.

A ſervant maid ſcalded her ancle, and was put under the care of a young gentleman, who had not been regularly educated in ſurgery. Upon the ſore in a little time becoming inflamed and painful, opiates were given, and a bread poultice and fomentations were applied. The pain, how-

ever, increaſed, the leg ſwelled much, the ulcer diſcharged a ſharp ichor, became very foul, and its lips were amazingly thickened and inflamed. Internal medicines of various kinds had no good effect; and after the poor girl had undergone five months excruciating pain, with the mortification of ſwallowing abundance of drugs, at which her ſtomach recoiled, and had ſpent all her money, ſhe luckily fell into the hands of a ſurgeon of character, who gave me this account, in a converſation on the neceſſity of ſurgeons being regularly initiated into the profeſſion.

He concluded from the aſpect of the ſore, and the touch of the adjacent parts, that the whole miſchief aroſe from their being over-relaxed, and the ſmall veſſels diſtended with fluids, which, by ſtagnating, were become acrid; and that a cure would be effected by taking off tenſion, and promoting a regular diſcharge. This he accompliſhed

compliſhed by applying a very mild digeſtive, and ſtrengtheners ; for upon the uſe of them ſhe became eaſy, the matter good, and a complete recovery ſoon followed. Hence we ſee, that trivial cauſes may bring on troubleſome diſorders, when proper ſteps are not taken in the beginning of the cure.

EXAMPLE III.

An old man received a ſmall wound upon his leg, which was neglected for ſome days, and then filled with precipitate. Pain, reſtleſs nights, inflammation, and an eſchar, were the conſequences ; wherefore yellow baſilicon, ſoftened with oil of turpentine, was applied, and a mercurial ſolution was given, which ſtill increaſed the ſymptoms ; for the ulcer enlarged under an inflamed ſtate, and the eſchar daily increaſed : nevertheleſs the irritating dreſſings were ſtill uſed, with the addition of a fomentation, a poultice

poultice in which was a conſiderable quantity of the extract of lead, and bark ſupplied the place of mercury. But the diſeaſe ſtill growing worſe, fixed air was thought on, and a poultice, in a ſtate of fermentation, was applied over the other dreſſings. However, this did not ſtop the progreſs of the diſeaſe; and, therefore, bark in powder was ſprinkled upon the inflamed parts, and a carrot poultice was afterwards uſed, with no better ſucceſs; ſo that at the end of three weeks or a month it was thought adviſeable to purſue a different method. The man appeared to be of a very irritable habit, of a hot temperament of body; and it was imagined, that the turpentine dreſſings, and fomenting, had occaſioned all the miſchief. This concluſion was juſtified, for when a mild ſedative digeſtive was applied, and *a cooling ointment* covered the inflamed parts, a ſudden alteration for the better appeared, and a happy termi-

termination of the diſeaſe was the conſequence.

Various methods of cure for corroſive ulcers have long been known: whenever, therefore, we ſee men prefer novelty in medicine to common ſenſe; give up a ſucceſsful eſtabliſhed practice, and tamper with remedies that have ſtarted from ſome new ſyſtem; we may conclude, either that they do not know what they are about, from not being properly initiated into their profeſſion; or, that they affect to deſpiſe the eſtabliſhed uſages of their art, in hopes of exciting admiration for ſuperior abilities. For though improvement, conducted upon clear facts, is certainly of the higheſt importance to ſociety; yet nothing, perhaps, has done more miſchief in the art of healing than the haſty catching at undigeſted novelty; for, like an *ignis fatuus*, it often miſleads and leaves us in the dark.

EXAMPLE

EXAMPLE IV.

A healthy young gentleman had the misfortune to make a ſlight wound on the upper part of his foot, in ſkaiting, and ſome family-ſalve was uſed on the occaſion. Inſtead of healing, the ſore inflamed, and diſcharged an ichor; upon which a ſurgeon was ſent for, under whoſe care the flux, &c. increaſed. He tried various means to conquer the malady, and, after being ſome time foiled in his attempts, he laid the blame upon the peccancy of the humours, and deſired the aſſiſtance of a phyſician; and, accordingly a phyſician, educated many years in one of the firſt medical ſchools in Europe, was called in.

The doctor viewed the foot, and preſcribed; but the ſtate of the ſore proved, that his medicines did not alter the diſeaſe. He varied his preſcriptions as diſappointment and *imagination* directed him; and, during the

the ſpace of three months, while the patient was confined to the houſe under his care, he ranſacked the whole *materia medica* for combatants to ſubdue an ill ſtate of the juices. Sometimes he attempted to ſcour them entirely out of the premiſes, by repeated purging; at other times he dealt more friendly, by ſending in remedies to alter their temper; nor did he omit an attempt to ſtarve out the imaginary enemy, by keeping the patient under low diet. Diſappointed of relief, enervated, and tired with the diſagreeable paſſage of a tribe of naufeous drugs through his ſtomach; the patient deſired the aſſiſtance of another perſon, who happened to ſee this affair in a different light from his predeceſſors, and found the juices in good humour enough, though reproached with virulence and obſtinacy.

The appearance of the patient's ſkin at once ſhewed it to be of that kind which is very

very irritable. Being aſked whether even ſimple plaiſters, applied at any time, did not raiſe ſmall bliſters which diſcharged an ichor, he anſwered in the affirmative; and upon tracing the matter throughout, it ſeemed evident the whole miſchief had ariſen from, and was continued by, the applications in this habit irritating and inviting a flux of lymph to the affected part; in the ſame manner as bliſtering ointments, in leſs irritable habits, produce a perpetual bliſter.

The foot was now much ſwelled, ſomewhat excoriated, and become more irritable from the long-continued flux brought upon it, and yet the doctor, was again for preſcribing calomel, &c. But as purges always increaſe the diſcharge and irritability of ſores, the ſurgeon, unwilling to be interrupted, deſired a truce from hoſtilities, that he might judge from the effects of a few dreſſings, and an alteration in the diet of

of the patient, whether internal medicines were neceſſary. Accordingly by the uſe of a neutralized ointment, which both leſſened irritability, and removed obſtruction, and the patient living upon a more generous diet, he was ſoon cured, without the aſſiſtance of internal medicines; except a little extract of bark and gum pills, given to relieve ſome hypochondriacal ſymptoms, brought on by the diſcipline he had unneceſſarily undergone, and which could not have happened had the preſcriber been an adept, from practice, in the cure of external diſeaſes. If the phyſician had been converſant in dreſſing of ſores, he would at once have ſeen the cauſe of intractability in this accident. His viewing the foot, therefore, was only a matter of form, from whence it is plain he derived no advantage.

Would not the phyſician, if he had been ſuffered to continue purging the patient fre-

frequently, have prevented a cure in oppoſition to all the ſurgeon could have done? And could internal remedies have done any ſervice, while irritating dreſſings were applied?

EXAMPLE V.

A gentleman had a large ulcer upon his leg, which was dreſſed with digeſtives compounded of turpentine, roſin, &c. The matter diſcharged was ichorous, and corroded the ends of the fibres, ſo that they appeared curdled; while the edges of the ſore were a little inflamed. The ulcer, which was very ſenſible to the touch, brought on an uneaſy ſenſation over the whole body. The patient could not ſleep; and reſtleſs nights, with weary days, for ſeveral months, deſtroyed his health, and reduced him to an exceeding weak ſtate.

His phyſician, a man of liberal education, and much experience, ordered him opium,

opium, and the bark in conſiderable doſes, but without affording any ſort of relief; when being almoſt worn out with watching and fatigue, another phyſician, who practiſed both medicine and ſurgery, was called to give his aſſiſtance.

Upon hearing what had been done, he was aware that the parts had been conſtantly irritated by the dreſſings; and experience had taught him, that native balſams, diveſted nearly of their heating quality, were in this caſe proper ſedatives. Under this idea he adviſed the ſore to be dreſſed with the balſam made of pitch, &c. and the edges to be afterwards covered with a neutralized ointment. Relief from pain was followed by ſleep in a few hours, and while he took bark and ſpirit of ſalt, under a ſtate of eaſe, health was reſtored to the body.

How could a phyſician form any true judgment from the appearance of a ſore,

who had never examined ſores critically? He did not ſuſpect the dreſſings, becauſe they were much milder than the digeſtives of the London Diſpenſatory; how then could he have adviſed a proper ſedative without experience, unleſs by accident? For had the ſore been differently circumſtanced, a different application muſt have been choſen for the purpoſe.

EXAMPLE VI.

A corpulent farmer took his daughter behind him to a race, and, to avoid accidents, rode into a corner on the outſide of the courſe. A gentleman, upon a vicious horſe, rode into the ſame place from the ſame motive; but unluckily as ſoon as he came near the other horſe, the farmer received a violent kick on the outſide of his leg, which made a large lacerated wound. The ſurgeon, who had been bred an apothecary, applied digeſtives, and an emollient

emollient poultice, under which treatment, long continued, the wound degenerated into a ſordid ulcer, and in time his health began to be injured. The patient loſt his fleſh, his complexion became ſallow, he had a hectic fever, and frequent returns of an eryſipelas on his leg, which all together alarmed the family, and induced them to think of farther aſſiſtance. The ſurgeon recommended a phyſician, who was incapable of reducing the ulcer into a healing ſtate, though the patient remained under his care near a year. The frequent returns of the eryſipelas, rigor, and fever, were ſaid to be beneficial, by keeping off other fevers; that the ſtoppage of the diſcharge might occaſion his death; and yet, with all theſe pretended advantages he became greatly emaciated, and daily declined in health. Upon this, he applied to a third perſon, to whom he gave a narrative of all that had been done; he ſaid he was

in perfect health at the time of the accident, and it was concluded, that the poultices, by over-relaxing the ſkin, *membrana adipoſa*, &c. had rendered their veſſels incapable of carrying on the circulation regularly; that hence a ſtagnation and acrimony in the juices had enſued; and that the hectic fever and eryſipelas were all owing to an abſorption of matter from the ſore; for that the leg being healed under proper treatment, would re-eſtabliſh his health, provided the *viſcera* were not injured. Happily this was not the caſe, for he perfectly recovered upon the ſore being cured.

The local management of the leg was out of the phyſician's line; he could not therefore cure the patient, becauſe this depended upon healing the ulcer. He might no doubt, aſſiſt in abating inflammation when the eryſipelas came on, by preſcribing cooling remedies; but this was only

only a temporary relief, which would, for the moſt part, have been accompliſhed by emollients, and promoting a plentiful diſcharge from the ſore.

EXAMPLE VII.

When Lord Cheſterfield's * legs ſwelled violently after a fever, neither Mead, Broxholme, nor Arburthnot, did him the leaſt good; but, on the contrary, increaſed the ſwelling by applying poultices and emollients. In this condition he continued near ſix months; till finding that the doctors could do him no good, he reſolved to conſult Mr. Palmer, the moſt eminent ſurgeon of St. Thomas's Hoſpital. This gentleman told him that the phyſicians had purſued a very wrong method, as the ſwelling of his legs proceeded from a relaxation and weakneſs of the cutaneous veſſels; and that he muſt apply ſtrengtheners in-

* Letter 370.

ſtead of emollients. Accordingly he ordered his legs to be put up to the knees every morning in hot brine *, in which meat had been ſalted. In three weeks time his Lordſhip was well, and he was hence led to conclude, that a right method of proceeding muſt be deduced from *a view of the parts*, to underſtand the manner in which they are affected. It will not be thought ſtrange, that ſuch eminent phyſicians ſhould perſiſt ſix months together in a practice which ſuffered the diſeaſe to increaſe, when we reflect upon the partiality of mankind to their own opinions, even when they reaſon from conjecture!

Conjectural reaſoning fallacious.

Whoever takes a view of what has been done by human reaſon, unſupported by evident facts, will find, if we may judge

* The intention in this inſtance was no doubt right; but we do not think his practice the moſt eligible, though it ſhews that any method founded in experience is preferable to that which is derived from the reaſoning only, of the moſt ingenious men.

from

from the fate of thoſe theories which have originated in ſpeculation, that there is not any thing more fallacious; and that it is always to be miſtruſted when thus employed. On the contrary, when reaſon is founded in nature, it certainly is one of the greateſt bleſſings beſtowed upon mankind; the proper office of theory not being to invent principles, but to explain and extend facts into uſe, without loſing ſight of them. It is very certain, if the phyſicians concerned in Lord Cheſterfield's caſe, had, like Mr. Palmer, been trained up practically to the cure of ſwellings of the legs, and had reaſoned from facts, they would have known better how to have treated his complaint: and if ſurgeons neglect to extend their views farther than performing operations, they will be equally incapable of aſſiſting thoſe who apply to them for relief.

Reaſon founded in nature uſeful.

The buſineſs of reaſoning.

RECAPITULATION.

Conclu-
ſion.

Upon the whole, it appears that no perſon poſſeſſes real knowledge, in any part of medicine, beyond what is acquired by obſervation and ſufficient experience; that though dividing the practice of medicine into ſhares may be convenient for individuals, yet there is no ſtudying this ſcience thoroughly, but upon the plan of Hippocrates, in a complete union of its branches. It may be compared to a circle, which will not admit of any diviſion of its parts, without injury; and accordingly Celſus aſſerted, that all the parts of medicine are ſo connected, that no one part can be ſeparated from the whole: all which will hereafter more fully appear.

POST-

POSTSCRIPT.

MIDWIFERY is another branch of ſurgery, in which the phyſician and operator ought to unite in the ſame man; it being impoſſible to treat the diſorders of pregnant and lying-in women without a perfect union in theſe offices. Without learning the practice of midwifery experimentally, and being able to diſtinguiſh properly regarding the ſtate of the womb, and the alterations women undergo on this occaſion, by due inquiry, all ideas will be very imperfect, and preſcriptions upon general knowledge will be more liable to do harm than good. On the other hand, if the operator has not made himſelf thoroughly acquainted with all a phyſician ought to know, the life of his patient may be in jeopardy, whenever he takes upon himſelf the management of any diſorder which may happen after delivery.

Dr.

Dr. Mead *, indeed, ſeems not to think a knowledge in the obſtetric art introductory to the office of preſcribing in tedious births; for he ſuppoſes even thoſe who are ſkilful in this branch, unacquainted with the means of mitigating or taking off falſe pains reſembling thoſe of the colic: and I have heard of others, though they never learned or practiſed midwifery, who think they ought to have the direction in all tedious labours, and that the *accoucheur* has nothing to do in croſs-births but to receive the child. Dr. Shaw † imagined he was capable of giving directions in difficult births, when he wrote upon that ſubject; and yet it is clear he did not well underſtand it. We cannot have a better inſtance to ſhew the

* Monita & Præcept. Med.

† We muſt not omit, that the doctor, many years afterwards, acknowledged with great candour, his temerity in giving a Practice of Phyſic, before he could have had any competent experience. See preface to Dr. Heiſter's Obſervations.

impro-

impropriety of giving directions, where practice has not made a man perfect in the buſineſs, than this writer's account of a natural delivery, and of the means which ſhould be taken to aſſiſt it!

Now the uſe of opium in falſe pains had been known long before Dr. Mead's time, and practitioners in this art had other neceſſary reſources, which he omits mentioning, to alleviate theſe troubleſome ſymptoms; for they knew that opium would often prove ineffectual, where clyſters were not previouſly given: and are there not other complaints attending women in labour beſides the colic, in which opium is equally uſeful? In a ſtate of great irritability, where exceſſive violent pain, accompanied with irregular ſpaſms, hinder the progreſs towards delivery, opium reduces all into order by leſſening the ſenſations of the patient. Nor are opium and clyſters the only remedies by which falſe

pains

pains are ſubdued, for they not unfrequently ariſe from an inflammation of the womb. True labour is only to be brought on in ſuch inſtances by bleeding and purging*; and when each of theſe methods are to take place, or whether the pains are true or falſe, only can be known to thoſe who are capable of judging from the ſenſation of the parts concerned, and the effects which the pains produce. The ſame may be ſaid regarding falſe pains, and thoſe which ſometimes much reſemble them, brought on by an obſtruction in the paſſage of the child. If a proper diſtinction is not made, we may be trifling with opium when ſomething elſe ought to be done; and this remedy may, in other inſtances, protract the labour when not timely given.

There is no author that I recollect, among modern writers, who has examined into the truth or falſehood of the very an-

* See Eſſay on Child-Bed Fevers.

cient

cient opinion regarding the influence of the moon on women in labour! If true, it explains the lingering and periodical returns in parturition which ſometimes happen, and at what time opium, if neceſſary, ought to be adminiſtered: I ſhall therefore take this opportunity of reciting what I have heard, and the obſervations I have in conſequence made, in my attendance on women in this ſituation.

More than twenty years ago, when talking of the opinion concerning the influence of the moon upon the human body*, with a gentleman of learning and clear underſtanding, he informed me, "that a "clergyman, in Glouceſterſhire, had made "obſervations many years upon what hap- "pened in her different motions. Among "other things he found, that the ſymptoms "of parturition very frequently came on at "her ſouthing, or at the oppoſite point;

* See Eſſay on Inflam.

"that,

" that, if they went off, or lingered for a " time, they returned at theſe periods, as " regularly as the moon, till the work was " accompliſhed: and ſo great an adept was " he in this ſpecies of augury, that, being " conſulted by his rural neighbours, when " they had reaſon to expect the event, he " was able to foretel at what hour their " herds would increaſe! He brought his " ſon up to ſurgery and midwifery, who, " in conſequence of the inſtructions he re- " ceived from his father, attended to theſe " circumſtances in his practice at Glouceſ- " ter; and found they very often corre- " ſponded with the obſervation the old " gentleman had made, where no impedi- " ment was in the way." It was in conſequence of the gentleman's lady being in labour that this diſcourſe happened; and to ſhew the truth of this doctrine, he wiſhed him to remember that ſhe began at five in the morning, that he was of opinion

nion ſhe would linger all day, and that the labour pains would return again with vigor before ſix in the evening: all which happened with the moſt deſirable accuracy. Indeed, he was furniſhed with ſo many ſimilar inſtances from the ſurgeon, that I could not avoid attending to what he ſaid upon the ſubject.

At firſt I had recourſe to the common ſouthing tables, and afterwards to one more correct; and by all of them there appeared to me to be ſome truth in what I had been told. The beginning of labour is ſometimes ſo obſcure, that it is hard to fix the time; but as often as it can be done, I wiſh notice may be taken whether the following obſervations bear any reſemblance to truth.

If the woman is at her full time, and every thing in proper order for a happy delivery, it will often be completed in conſequence of the firſt impreſſion made by this planet.

If,

If, from the peculiar ſituation of the fœtus, more time is required; at which ever period of the moon the labour begins, it will go on twelve hours and a half or thereabouts*, which is the time ſhe takes to gain the oppoſite point, and will then, perhaps, terminate.

If the labour has not advanced during the interval, no material alteration may happen till ſhe completes her diurnal revolution; or where there is any ſlight impediment in the way, twelve hours and a half more, or double that number may elapſe before the attendants are releaſed. For inſtance, at nine o'clock in the morning, while a lady was ſitting eaſy in her chair, ſymptoms of approaching labour came on without the leaſt pain; and this upon inquiry, I found happened about the

* The moon takes from twenty-four hours and forty minutes to twenty-four hours and fifty-ſeven minutes to perform her diurnal revolution; but, from various obſervations, I think, the pains recommence when ſhe begins to get near the oppoſite point, perhaps within half an hour, though it may be more or leſs.

ſouthing

ſouthing of the moon. As no pain followed, I imagined the child lay high, and that labour pains would not come on till next morning, which accordingly happened; for ſhe was perfectly eaſy all day, and had an exceeding good night, but betwixt nine and ten o'clock next morning ſhe ſuddenly fell into labour, and was ſoon delivered.

Another was ſeized in labour at five in the evening, at the ſouthing of the moon; but the pains diminiſhed in about an hour, leaving the *os uteri* not dilated more than the ſize of a ſix-pence. Lingering pains followed all night, and betwixt five and ſix in the morning, when they increaſed, the dilatation was about the circumference of a half-crown. Labour, however, did not now terminate, for it ſoon decreaſed, and lingering pains again enſued, till about ſix o'clock in the afternoon, when they returned with force and effect; nature completing her work inabout the ſpace of an hour.

Another woman had been in labour five days, and on Thurſday in the afternoon, when I firſt ſaw her, I was told by the midwife that the child's head had been in its preſent ſituation ever ſince Monday morning; and that ſtrong pains had periodically returned. Upon examination, I found the birth had been protracted by the head reſting againſt the *os pubis*; wherefore, I deſired that ſhe would lie upon the bed with her ſhoulders lower than the reſt of her body, which had the deſired effect of removing the obſtacle: for when the pains returned at the lunar period, ſhe was ſoon delivered with great eaſe. I may truly ſay, I have frequently met with ſimilar inſtances; and have often kept my patient and the family in temper and in ſpirits by my predictions, through a tedious labour, which is a matter of no ſmall concern in the practice of midwifery. In this inſtance, the lingering or intermediate pains are preparatory to the future

future event; and we may wait with eaſe of mind till the happy minute arrives, without offering any other aſſiſtance than what comes from the hands of the nurſe. Indeed, when the patient is much fatigued, recourſe may be had to opium, but it ſhould not be given near the time we expect the pains to return; becauſe by leſſening irritability at this period, we may protract the labour longer than would otherwiſe happen. In ſhort, every old woman in the kingdom knows, that women after falling in labour often get better, and go on to the oppoſite hour, or, perhaps near twenty-four or forty-eight hours longer; ſoon after which the pains recommence with vigour, and nature finiſhes her work. Theſe periodical effects are certainly governed by ſome periodical cauſe; and, if we cannot find a better than the ancients aſſigned, we may ſtill cry out with Glycere, *Juno Lucina fer opem, ſerva me obſecro.*

Theſe reflections are not to be confined to the management of falſe or lingering pains; for ſuppoſe, a woman to be ſeized with convulſions at the onſet, or any time in labour, in what manner can a preſcriber direct with true judgment who is unable to make a proper inquiry into the complaint? and why ſhould gueſs-work take place where true information may be obtained? Regarding child-bed fevers too, the preſcriber will be in the dark if he is not able to draw concluſions from the ſize of the abdomen previous to labour; from the progreſs of the labour, from the evacuations which naturally happen, from the coming away of the placenta, from the different appearances of coagulated blood, and from a hundred other things, which can only be known by thoſe who practice midwifery: it is therefore incumbent on phyſicians, who intend to preſcribe in puerpery to learn this art, and I believe it was never better taught than in theſe days.

TWO DISSERTATIONS,

THE ONE, ON THE

BRAIN AND NERVES;

THE OTHER, ON THE

SYMPATHY OF THE NERVES,

AND

ON DIFFERENT KINDS OF IRRITABILITY.

THE SECOND EDITION, WITH ADDITIONS.

ADVERTISEMENT.

AS there are no Diſeaſes in which the Nerves are unconcerned, the following Diſſertations are prefixed to theſe Medico-chirurgical Works.

DISSERTATION I.

CONCERNING

The BRAIN and NERVES.

EVERY man who has made a proper inquiry into the ſcience of medicine, knows, that the word Nerve was not uſed to ſignify any part of the body but the tendons and ligaments, till the days of HEROPHILUS and ERASISTRATUS; who were the firſt diſcoverers of the *uſe* of the nerves ariſing from the brain: and they very improperly gave them this name, probably, becauſe they appeared to be white chords, ſomewhat reſembling tendons, and had really a nervous, but what is now called, a membraneous coat; though in every other reſpect deſtitute of any properties by

Nerves ariſing from the brain why ſo called, but improperly;

which they ſhould have been thus characteriſed *.

However, this appellation immediately affixed to them the idea of a chord, or one ſolid body; and the firmneſs and tenacity of the *dura* and *pia mater*, which make part of their ſubſtance, ſtrengthened this opinion: hence innumerable falſe theories, and much perplexity ſeem to have ariſen; and though the diſcoveries in anatomy have been abundantly ſufficient to rectify theſe miſtakes, (ſee Boerh. Inſtit. ſect. 281, and 283.) yet it does not appear, that the diſcoverers themſelves, or any body after them, have formed a right conception about this matter. For though they knew that the "callous hardneſs of the "nerves aroſe from their including mem-"branes, in which the medulla of the brain "retains its original diſpoſition invariably "throughout their whole diſtribution to

and productive of miſtakes,

notwithſtanding the late diſcoveries in anatomy.

* See Hip. de Locis in Homine, ſect. 1.

"every

"every part of the body, and that it "continues of as ſoft and mucous a ſub- "ſtance in the ſmalleſt fibrils, as at its ori- "gin in the brain itſelf;" yet they could not get clear of the commonly received opinion. For at the ſame time that they talk of the brain being a *mucus*, they alſo tell us, "that its *fibres* form the nerves, which "are wholly pervious, and through which "the nervous juice, ſecreted in the brain, "paſſes to every individual point in the "body, and performs all the actions of "the nerves: for which purpoſe (excepting "the nerves of ſeeing, hearing, and ſmell- "ing) they ſay, after coming to the ſeat "of action, they depoſite their coats; "and this tubular pulp is formed into "little heaps termed *papillæ*; and that "the leaſt fibre or ſolid part of the body "is not without its nerve." So that in fact they ſuppoſe, the inward or medul- lary part of the nerve to be *fibrous tubes*, carrying a fluid from the brain; and that

Writers ſtill adhere to the opinion, that the nerves are pervious tubes, carrying a juice which performs all their actions.

this fluid performs every thing which is ſaid to be done by the nerves.

Haller of this opinion,

So firmly was this theory fixed in the mind of Haller, that, in his experiments on the ſenſible and irritable parts of animals*, he did not diſcover that the *gelatinous* ſubſtance connected with *muſcular fibers*, was the brain; though he ſays, "the moſt irritable parts are deprived of "that property, by robbing them of this "*mucus*:" conſequently, he was under inſurmountable difficulties to account for *mucus* produced from inſenſible lymph becoming irritable, though he undertook to demonſtrate, that irritability does not depend upon the nerves, but upon the original fabric of the parts which are ſuſceptible of it. Whytt too, not being aware, that in irritating the *common membrane*, he irritated the brain, had recourſe to a *ſentient principle*, in the muſcular fibres, to account for their contraction, upon being irritated. So difficult it is to

which obliges him to account for inſenſible parts being irritable.

Whytt for the ſame reaſon is forced to ſuppoſe a *ſentient principle* in the muſcular fibres.

* Page 53.

leave

leave off copying every thing but nature, that even later writers tell us, that the nerves are maſſes of fibres, ariſing from the internal or white part of the brain; and are covered with membranes of a very firm texture: ſo that not the whole, as originally, but the inward part only (which they ſay is fibrous) is now called the nerve.

Laſtly, by an intended refinement, the inward part only, inſtead of the whole, is improperly called the nerve.

If we examine the brain with our own eyes, and our own ſenſes, without being prepoſſeſſed by any former opinion, there is every appearance, that this doctrine, after all that has been ſaid about it, is unſupported by facts. In particular, I have examined impartially the brains of hares, ſheep, and oxen, as directed by Boerhaave (ſee Inſtit. § 270) to diſcover the filaments which made theſe *nervous fibres*; but inſtead of being convinced of the truth of his opinion, I am thoroughly perſuaded it is unſupported by facts. Nor do I think it would be any difficult matter to prove, from his own account, that what he has ſaid about

But all this doctrine is unſupported by facts,

and ſeems to be an hypotheſis.

about the brain being *fibrous*, is wholly an hypotheſis; for it is confeſſed that the fibrils, which *are ſuppoſed* to ariſe from the cortical part, are *inviſible* even with the aſſiſtance of the beſt microſcopes, till a *hundred or a thouſand* of them are joined together, when they may be perceived under *the form* of the medullary ſubſtance of the brain.

If we cut open the brain, and view it with a good microſcope, it appears, as far as we can diſcover, to be a *mucus*, or *gelatinous ſubſtance*, void of fibres. If we raiſe up a ſmall piece of it with the point of a knife, ſo that we can ſee through it, it has the ſame appearance; and upon letting it drop, it falls in the ſame manner as any other mucus, or gelatinous ſubſtance of the ſame conſiſtence would do.

For the brain appears to be a mucus, or gelatinous ſubſtance of a particular kind.

The medullary part of the brain, eſpecially the *medulla ſpinalis*, adheres to the fingers like glue, upon being preſſed; and by comparing it with flour and water

ter * made of a proper conſiſtence, they have a reſembling tenacity. Both alike may be gently drawn into the appearance of membranes or fibres; and in whatever manner the examination is conducted, it appears to be a mucus or a gelatinous ſubſtance of a *particular kind*, cohering firmly together. Nor can we have a better evidence than Haller on this occaſion; for at the time when he was a great advocate for the brain being fibrous, yet when he ſaw it without knowing what it was, it appeared to be "*a mucus:*" and if the moſt unorganized fluid will conduct the electric vapour, why may not a ſenſible mucus be the fitteſt conductor of ſenſation?

Of which Haller, contrary to his own opinion, is an evidence.

It ſeems agreed, that every nerve (as it is called) which is capable of being ſeen, is a bundle of nerves; and upon this bundle being cut open longitudinally, the

* This compariſon is not meant to be extended farther than to aſſiſt in proving that the brain is not fibrous.

out-

outſide or membrane belonging to each of them, will make a fibrous appearance: but view the brain within the ſkull, juſt before it enters theſe membranes, with a microſcope, and it will appear, that the inſide of a nerve is not a maſs of fibres ariſing from the white part of the brain, but that it is a ſmall portion of the white part of the brain itſelf, which is not fibrous, but the ſubſtance deſcribed. This being conducted by the *dura* and *pia mater* to the different parts of the body, it depoſits one or both of theſe coats, as our experiments will prove, and is diffuſed round every fibre, not only upon the part it is carried to, but a conſiderable way round: ſo that each portion of the brain conveyed by its own nervous caſe, meeting, form one continued or connected ſubſtance, in every part included within the cuticle; and gives that gloſſy or gelatinous appearance, which is ſo readily diſtinguiſhed in the muſcular fibres. From whence

Nor is the inſide of a nerve a maſs of fibres, but a portion of the brain which is conducted to, and ſpread upon the muſcular fibres.

whence it appears, that the brain is not confined to the ſkull, but is expanded in every part of the body, in the ſame manner, but much thinner, as the retina is expanded at the bottom of the eye. We have one inſtance of this in what has been juſt advanced.

If we view the optic nerve at its going out of the ſkull, it has not the leaſt fibrous appearance*, but ſeems to be the mucus or gelatinous ſubſtance deſcribed; and when it enters the inſide of the eye, it at leaſt depoſits its coat, formed by the dura mater, and is ſpread unchanged for the purpoſes of viſion. If we put the retina

* Care muſt be taken, in making this experiment, that we are not deceived by falſe appearances. If we ſnip the edge of the *ſclerotica*, where it ſurrounds the *iris* ſo that the eye may be turned inſide out, and then view the retina perpendicularly through the vitreous humour ſtill adhering to it, it will ſeem to be perfectly fibrous; but this fibrous appearance is given it by the fibres of the membranes underneath, and by taking a ſlanting view over it, the true ſtructure will be ſeen; or remove it, and view it by itſelf, and it will appear deſtitute of fibres.

into

into ſoap lees*, it ſoon becomes ropy, and has more the appearance of the white of an egg, than of any other ſubſtance with which I can compare it. If it is afterward laid upon a piece of thin white paper, and viewed with a good microſcope, at the time the paper is held againſt a well-lighted window, if there is any dependence upon our eye-ſight, it will appear to be as deſtitute of any thing fibrous (if we except the blood-veſſels) as any ſubſtance can poſſibly be; and upon drying it upon the paper, it leaves not a trace

* This experiment was made to diſcover, whether there is any part of the retina membranous; for ſeeing that the inner *lamina* of the *pia mater* inſinuates itſelf into the brain, and that the *dura mater* is ſtrong enough of itſelf to form a conductor, I was led to ſuppoſe, that the brain is connected, and ſpread by the *pia mater*, reduced to a moſt extreme degree of fineneſs: but the above experiments, taken all together, do not ſeem to warrant clearly this opinion, unleſs we ſuppoſe a membrane of that fineneſs to be inviſible, when dried upon paper.

be-

behind*. Thoſe, therefore, who adhere to the opinion, that it is formed of threads, which continue ſeparate and diſtinct, certainly prefer conjecture and hypotheſis to ocular demonſtration; for no man has yet ſeen the termination of a nerve: and we only wiſh thoſe who ſtill adhere to this fabricated doctrine, to view the brain, the retina, and the inſide of a nerve, in a ſolar or other proper microſcope, and to be convinced by what they ſee. We are perſuaded the leaſt ſigns of a fibre, except blood-veſſels, will not appear; and we have not any doubt of making a convert to the opinion advanced, of every ingenuous man whoſe mind is open to conviction.

* In note to ſect. 274 of Boerhaave's Inſtitutes, it is ſaid, "Brain being diſtilled with a very ſlow fire, in a "heat not exceeding that of boiling water, quickly turns "almoſt wholly into a limpid water, leaving very few "ſolid veſſels behind; or that being freed from the *pia* "*mater*, it almoſt wholly evaporates in the ſhade."

Therefore ſenſation is not always loſt upon tying or dividing a nerve in the part to which it goes;

It is ſaid, indeed, that tying any nerve deſtroys the ſenſation of the part to which it belongs; which, if ſtrictly true, would diſprove the whole of this doctrine: but it does not hold good any farther than when all, or the greateſt part, of the nerves belonging to a particular part are divided or tied. If the ſpinal marrow is divided near to the head, we know the parts below ſoon irrecoverably looſe their action; or if the bundle of nerves paſſing out of the *axilla* were divided or tied, ſenſation in the greateſt part of the arm below would probably be loſt. But we all know, that in performing the operation for the aneuryſm in the arm, if the nerves which accompany the brachial artery are tied, a temporary numbneſs is only felt, and ſenſation in any degree below the ligature is not loſt.

but a temporary numbneſs, or palſy, is often the only conſequence.

I have ſeen the ſuperior cubital nerve torn aſunder above the elbow, in a gunſhot wound, with conſiderable loſs of ſub-

ſtance, and a temporary palſy only was the conſequence: in ſhort, does not a diviſion of large nerves in wounds daily happen, without any loſs of ſenſation below? which can only be accounted for, by the communication we have endeavoured to prove. Thoſe who account for it by talking of a communication of nervous influence independent of the nerves, will probably fail in their proof.

Farther proof.

If there were not this communication, and if we ſuppoſe them veſſels going to particular points, all the nerves in the body would not by any means be ſufficient to accompany the muſcular and other fibres: whereas, when we view them in the light of diffuſing the brain, it is very obvious in what manner a leſs number of nerves may ſupply the whole body with ſenſation. Beſide, if the nerves continued, as ſome ſuppoſe, ſeparate chords, or ſtraight lines, to their extremities, would the true image of a horſe (for in-

ſtance) be conveyed diſtinctly to the mind, unleſs taken up by their extremities? Would not then this ſingle object be multiplied in proportion to the number of nervous filaments? Or would not irritation from the point of a needle be confined to the nerve or filament upon which it happened to be made? Whereas the truth is, all the muſcular fibres, for a conſiderable way round, are immediately convulſed. In ſhort, it appears to the naked eye, that nature has diffuſed the brain for the purpoſes of hearing, ſeeing, and ſmelling: then why not for receiving and conveying the other ſenſes?

However, I have not contented myſelf with reaſoning by analogy; for I have compared the medullary part of the brain with the *retina*, with the olfactory and auditory nerves, the nerves of the limbs, and with the gelatinous ſubſtance, or mucus, which is very thinly ſpread upon the muſcular fibres, by the help of a proper

microſcope; and find them all to have the ſame appearance. If we irritate the medullary part of the brain within the ſkull, we find univerſal convulſions follow; if we irritate a ſingle nerve, a neighbouring muſcle is convulſed; and if we irritate the gelatinous ſubſtance upon the muſcles, the muſcular fibres are convulſed *; which evince that they are all the ſame ſubſtance.

And experiments ſupporting the doctrine advanced.

The contraction, dilatation, and tremulous motions, which for a conſiderable time happen to the muſcular fibres, upon being laid bare in ſlaughtered animals, I have no doubt are owing to this external mucus, or gelatinous ſubſtance being irritated by the air: becauſe we ſee the ſame effect is produced by irritating it with a

* Whytt ſays (Vital and invol. Mot. p. 237.) in order to the contraction of a muſcle, it is not neceſſary that the ſtimulus ſhould be applied to its fibres; it is enough that the common membranes covering them are irritated, the ſame effect being hence produced as from wounding the very fibres of the muſcles.

briſtle, or the point of a fine needle; and becauſe the tremulous motion entirely ceaſes, nor can motion be produced in the fibres by the air, or by any other means, when it is rubbed off, or becomes dry. Whence it is evident, that the brain is the only part of the body which is capable of being irritated; for though it be true, that a nerve cannot be made to ſhorten itſelf by being irritated (becauſe it is a gelatinous ſubſtance inveſted in unelaſtic membranes, and does not perform its office by contraction), yet it does its office of receiving irritation, and of conducting it in its full force to the muſcular fibres, becauſe they immediately contract upon its being irritated.

The brain is the only irritable part of the body.

The muſcular fibres are the only parts of the body which do their office by ſhortening themſelves; and it ſeems owing to this property, that they are the only parts which contract and have tremulous motions upon involuntary irritation. But that

that this irritation is firſt received by the medullary part of the brain, and by that communicated to the muſcular fibres, is beyond poſſibility of doubt; becauſe they are incapable of being put into motion when diveſted of this ſubſtance, as may be eaſily proved by rubbing it off with a dry cloth: nor does it loſe this property of producing motion in a part ſeparated from the body, or after an animal has ceaſed to breathe for a conſiderable time, as innumerable inſtances prove. Whence it follows, that irritability entirely depends upon ſenſibility, as no part can be irritated which is inſenſible*.

The ſtructure of the nerves farther explained.

But to explain myſelf farther; might not the arteries, with the blood contained in them, almoſt with equal propriety be

* Haller aſſerts (on Irrit. p. 32) that the moſt irritable parts are not at all ſenſible, and vice verſa: according to which opinion, the muſcular fibres muſt be inſenſible, becauſe they are very irritable; and yet they appear to be ſenſible; or why does a patient ſhew ſuch ſigns of pain, when they are compreſſed with a ligature, in taking up divided arteries?

called chords? They are tubes, which conduct the blood to every part of the body. The *dura* and *pia mater* † form tubes, which conduct the brain in a ſimilar manner: but the one conducts a fluid, and the other a *mucus*, or a gelatinous ſubſtance; and the only farther difference I know, is, that each portion of the brain has a ſeparate conductor; whereas the blood is carried from the heart by two arteries, and diſtributed by the action, and branches of thoſe arteries.

Now there is not any doubt, that a fluid is ſecreted in the brain, and that it is as immediately neceſſary as blood, to the life of the animal; becauſe we meet with it in diſſecting the brain, becauſe this fluid fills the tumor accompanying the *ſpina biſida*,

† It has before been obſerved, that there is a doubt, whether the whole of the *pia mater* is an including membrane. Perhaps the outward *lamina* may be an including, and the inner a connecting membrane; but not being able to prove this with certainty, we have here adopted the general opinion.

and

and becauſe opening theſe tumors is as certain death as draining all the blood from the body: and yet, it is very uncertain what office this important fluid performs. Perhaps it may be the conductor of ſome more active agent; it may be the proper food of the nerves; or it may do both theſe offices: but we have no more reaſon to ſuppoſe, that it performs all the actions of the nerves, than that the blood performs muſcular motion becauſe it circulates through the muſcles. That it is the conductor of ſome more active agent, may be ſuppoſed from being itſelf incapable of thoſe rapid effects produced by the nerves; and from our knowing that the moſt active matter may be conducted by a fluid. The medullary part of the brain muſt require nouriſhment*. It is certain the blood-

* Thoſe who imagine that a fluid performs all the actions of the nerves, are obliged to ſuppoſe it a thin volatile liquor of a great force and elaſticity, or rather that it is the univerſal elaſtic matter which is diffuſed through the univerſe; otherwiſe it does not anſwer their purpoſe: but

veſſels terminate in the cineritious part, and it is, therefore, reaſonable to ſuppoſe, that it ſecretes or imbibes from the lymphatic arteries a proper fluid for that part of the nervous ſyſtem, into which red blood does not enter. The cineritious is, perhaps, placed in the medullary or middle part of the brain and nerves, for this purpoſe; nor can there be any impropriety in imagining, that the ſame fluid was ordained for more uſes than one. Having done its office, it may drain from the expanded brain into the interſtices of the muſcular fibres, and, being taken up by the lymphatics, be again carried into the circulation. We know, by wounds of the brain, that the medullary and cineritious parts perform different offices; becauſe much of the cineritious part will often be removed, or ſuppurate, without inconvenience: but when the medullary part ſup-

but whoever looks at the fluid ſecreted in the brain, will ſee that it is too groſs to be very active, and that what has been ſaid about its extreme ſubtilty is mere invention.

purates

purates or is deſtroyed, a deſtruction of the whole body follows. However, whether what is ſaid about the ſecretion of the fluid belonging to the brain be true or falſe, it ſeems evident, from the experiments mentioned, that the medullary or gelatinous part of the brain, whether ſeated in the head, or the other parts of the body, is the *receiver, the ſeat, and conductor* of every kind of ſenſe. The manner in which it perceives, or communicates ſenſation, or its effects, to other parts, may after all, be among thoſe ſecrets in nature, which it is hard, or perhaps impoſſible to diſcover.

DIS-

DISSERTATION II.

OF THE

SYMPATHY of the NERVES.

Of inflammatory irritability:—Of ſpaſmodic irritability:—Of inflammatory and ſpaſmodic irritability united:—And, laſtly, of inflammatory irritability attending both a ſizy and a putrid ſtate of the blood.

The brain itſelf is carried to every part of the body.

IN ſpeaking of the nerves, it is evident I would wiſh to be underſtood to mean the *brain*, conducted in the *dura* and *pia mater*, extended to every part of the body: and my practice and experiments inform me, that involuntary impreſſions made upon that part of it which covers the muſcular fibres, are not only

Impreſſions made on one part of it affect the whole, and occaſion

con-

conveyed to the head by the nerves, but that they are alſo conveyed immediately along the diffuſed brain to every part of the body. This fully explains in what manner the well known conſent of parts is brought about, without the difficulties which thoſe lie under, who believe, that there is not any communication in the extremities of the nerves, but that every individual nerve is quite diſtinct from every other, not only in its riſe from the medullary ſubſtance in the brain, or ſpinal marrow, but alſo in its progreſs to that part where it terminates.

what is called conſent of parts;

Some have gone ſo far as to ſuppoſe, that in general the nerves of the body ſympathize, not from their connections in their progreſs, but from their connection at their origin; while others, being aware of the impoſſibility that inſtantaneous ſympathy ſhould firſt paſs round by the head, have ſuppoſed the ganglions to be the chief inſtruments in this matter. For inſtance, they ſay, "that the intercoſtal

which has not been hitherto ſatisfactorily explained:

"and

" and other nerves form a ganglion cloſe " by the *glandulæ renales*, into which the " eighth pair enter ; and that from ſuch a " knot on each ſide, the nerves of the guts, " liver, ſpleen, pancreas, and kidneys, are " derived : nay, that the extremity of this " nerve is ſent down to the *pelvis*, to ſup- " ply the parts there. Hence the great " ſympathy of thoſe parts may be eaſily " deduced, and a reaſon may be given of " the violent vomiting that attends a *ne-* " *phritis*, and of the belching colics, and " ſtomach-achs, which often enſue on the " obſtructions of the *menſtrua*." But this only accounts for a particular, and not a general conſent of parts ; nor is even this doctrine evidently true. If the ganglions, indeed, contain ſmall portions of the brain, as ſome ſuppoſe, it is eaſy to conceive in what manner conſent of particular parts may be carried on by them ; but if the brain paſſes through them, incloſed in the dura and pia mater, it cannot well be ſuppoſed that

that ſenſation can be communicated through membranes from one part of it to another. However, we are willing to allow conſent of parts by various ways: there is no doubt but ſenſation is communicated along the nerves to the head, and perhaps to particular parts, by means of the ganglions; and all we contend for is, that there is a general and immediate conſent of parts along the brain, diffuſed throughout the muſcular fibres, becauſe this connection is demonſtrable to our ſenſes; and I will mention ſome practical inſtances appoſite to our purpoſe.

but conſent by the expanded brain is demonſtrable to our ſenſes,

When a wound becomes inflamed, the nerves (*i. e.* brain) in the affected part become more irritable, and a fever with a quicker pulſe are produced; probably from the brain diffuſed round the fibres of the heart becoming, by this conſent, more irritable than uſual; whence the blood ſtimulates it with greater force, and a briſker circulation enſues. Nor can we have

have much doubt of this being the true cauſe of fevers ariſing from an inflammation; becauſe they diſappear immediately upon the increaſed irritability of the affected part being removed.

as practical inſtances prove.

CASE I. I took off a lady's breaſt, who was of an irritable habit, and alſo ſeveral large glands out of the *axilla*, uſing dry lint and digeſtive pledgets for the firſt dreſſing; but when the wound became inflamed, a vomiting came on, and the nerves of her ſtomach became ſo very irritable, that ſhe could not bear the lighteſt food paſſing into it, without its being thrown up again: but, by pouring warm oil into the wound, the irritability of the nerves about the part was taken off, the vomiting ceaſed, and her ſtomach was reſtored to its proper tone.

CASE II. A gentleman, thirty years of age, who, being troubled with ulcers, was frequently ſeized with an eryſipelas on his legs; during the inflammation, a vomiting always

ways came on, eſpecially upon his taking food in a morning, when his ſtomach was empty: internal medicines afforded him no relief; and applications, which were capable of taking off tenſion, were omitted, on a ſuppoſition that they might do harm. But upon this patient falling into a perſon's hand, who thought differently about this matter, the vomiting was ſoon entirely cured by topical applications alone, which took off the increaſed irritability of the affected part.

A gentlewoman, forty years of age, had a moſt violent cough, during the increaſe of an abſceſs in her hand and wriſt; but upon the matter being let out, the tenſion abated, and her cough *directly* left her; becauſe the increaſed irritability of the nerves in the lungs, occaſioned by the inflammation in the wriſt, was by this means removed. CASE III.

"A middle aged woman, who had "ſprained her right foot and ancle, ſome CASE IV.

" weeks after, not only complained of a " pain and ſtiffneſs in theſe parts, but alſo " felt, though in a much leſs degree, a " tenſion and ſoreneſs over her whole bo- " dy * :" which would not have happened, unleſs there had been this nervous expanſion, of which we have been ſpeaking.

I took very lately a large ſcirrhus out of a woman's breaſt, of a very irritable habit; and, after ſome time, an inflammation in the axilla appeared, attended with rigors, fever, and exceſſive reachings, ſo that ſhe could not keep any thing upon her ſtomach. Nor was the immediate connection of every part of the brain ever more evident; for upon preſſing the inflamed part gently, to diſcover the ſtate of it, a reaching to vomit inſtantly came on: it ceaſed upon the preſſure being removed, and again returned upon preſſure with the finger taking place, with the ſame quick-

* Whytt on Nervous Diſeaſes, p. 80.

neſs

neſs that the pipes of an organ would ſpeak upon the keys being preſſed down. The irritability of the whole habit did not leſſen till the matter, which was forming, had deſtroyed the veſſels which contained it: though the gentleman who had the care of the patient in my abſence, ſeeing the ulcer become dry, gloſſy, and flabby, gave a decoction of the bark which relieved her vomiting, probably by taking off the irritability of the nerves of her ſtomach; and when ſuppuration had taken place, all theſe ſymptoms entirely diſappeared.

There are two kinds of irritability,

But there are different kinds of irritability. This we have juſt been treating of, is inflammatory irritability; which always ariſes from diſtention, or continued irritation; and always, while the inflammation is attended with any conſiderable degree of violence, produces a fever and a quick pulſe. Another kind is ſpaſmodic irritability; which is confined to the ex-

which are diſtinguiſhed.

panded brain, and never affects the pulſe or produces a fever.

The gelatinous ſubſtance, or mucus, which gives the muſcular fibres their gloſſy appearance, ſeems to be expanded brain: and if we view a very irritable clear ulcer, unattended with inflammation, through a microſcope, we ſhall find it of a variegated purple colour: there manifeſtly appears to be a kind of obſtruction or opaqueneſs; the diſeaſe is as evident, as an inflammation upon an external part; nor does the preternatural irritability ever ceaſe, till this variegated colour diſappears. I have ſeen this diſeaſe bring on the *tetanos*; and I will give an abſtract of a caſe or two of this kind, which will perhaps convey a ſtronger idea of ſpaſmodic irritability, and the manner in which involuntary impreſſions are communicated along the brain, than any thing I can ſay.

CASE V. A man, forty years of age, in the beginning of October, 1768, had the hinder part

part of his heel torn, and bruiſed very much by the wheel of a waggon; and on the thirteenth of that month my aſſiſtance was deſired.

I found a ragged, undigeſted ulcer, ſomething higher than the *os calcis*; and upon paſſing a probe, a *ſinus* was diſcovered, penetrating to the bottom of the heel: this being opened, diſcovered, that the bone was bare in many places, the tendon much lacerated, the adjacent parts greatly ſwelled, inflamed, and painful; and a fever accompanied the whole. *Tetanos.*

A mild digeſtive balſam, with cataplaſms, were applied; and a decoction of the bark was given with advantage; for at the end of five days the fever (which never returned) had entirely left him, and the ulcer began to have a very promiſing aſpect: he complained however of a ſtiffneſs in the muſcles, which move the lower jaw; wherefore I ordered him thirty drops of laudanum, which made him ſleep. But

notwithſtanding we kept repeating our doſe every eight hours, yet in three days time the jaws were fixed, ſpaſms came on in the muſcles of the injured leg, and ſoon afterwards the muſcles of the back were affected in the ſame manner.

I took off by inciſion all the diſeaſed parts down to the bone, and by a proper poſition of the knee and foot, the tendon of the *gaſtrocnemius* was preſerved in a ſtate of relaxation: but though the ſore digeſted well, the new fleſh roſe out of the bone, the ulcer incarned regularly, and (if we except that the fibres were tinged with a variegated purple colour) it looked well; yet, inſtead of leſſening, the ſpaſms daily increaſed, and notwithſtanding he now took eighty drops of laudanum every four or ſix hours, the degree of irritability became ſo very great, that the leaſt noiſe was offenſive; and a pair of tongs, accidentally falling upon the floor, brought on violent convulſions.

If

If the door of his room happened to be left open, the freſh air was not only diſagreeable but painful, and preſently renewed his ſpaſms; wherefore, of his own accord, he put on a thick flannel waiſtcoat to avoid its effects. Upon preſſing the ſore as gently as poſſible with a piece of rag, to take up matter, every fibre conſidered diſtinctly was thrown into ſpaſms, which inſtantly extended to the muſcles of the calf of his leg, and from thence to every part of his body; in particular his head was drawn backward, with ſudden and violent force; and at times, I believe, he underwent every kind of convulſion. His ſtrength daily leſſened, and it evidently appeared, that bark and opium only gave a temporary relief; and that if farther aſſiſtance could not be given, death would be the conſequence.

Reflection brought to my mind the effects of the balſam of Peru in allaying preternatural irritability in uninflamed ul-

cers; wherefore, on November the 4th, it, was applied to the ſore, and though the ſpaſms did not entirely ceaſe, yet they were *directly* abated ſo much, that from this time we had not any farther occaſion for opium. By continuing this dreſſing, the ſore became leſs irritable, the patient ſlept, the ſpaſms gradually diſappeared, and in about a week's time entirely left him, though the jaw continued ſtill to be locked for ſome time longer; nor did he recover the complete uſe of it for ſeveral weeks.

CASE VI. A young gentleman, fifteen years of age, was, in the latter end of November 1758, ſeized with pain all over him, which (as he had an eruption upon the ſkin that now diſappeared) was taken for a ſcorbutic rheumatiſm, and treated accordingly; but without any good effect. He was ſeveral times let blood, and after ſome blood being taken away, in the beginning of February, he was ſeized with convulſions, upon which I was deſired to ſee him.

I found

I found him very weak, low, and much reduced; his pulſe was regular, but weak; he had exceſſive and conſtant pain in his knees, ſhoulders, and wriſts, without ſwelling or diſcolouration; he frequently had ſpaſms in the abdomen, in the muſcles of the abdomen, and in ſeveral parts of the body, and his urine let fall a ſediment.

I ordered him a variety of medicines at different times, but with no better ſucceſs than thoſe who had gone before me; for his ſpaſms continued to increaſe, and at the end of three weeks or a month he was ſeized every ten or fifteen minutes with a violent difficulty of breathing, from a ſpaſm of the diaphragm. Upon theſe alarming ſymptoms, a phyſician of eminence was called, who preſcribed opium in large quantities, with the moſt powerful antiſpaſmodics he could think of, but without giving any relief; and the moſt violent convulſions followed his taking three grains of calomel, and twenty grains of rhubarb.

Soon

Soon after this, medicines were diſcontinued, but the pain in his knees, wriſts, and ſhoulders, &c. ſtill remained. His body and limbs were almoſt conſtantly diſtorted; he got little or no ſleep; which, with the difficulty of breathing, that aroſe from the ſpaſms of the diaphragm, made his caſe truly deplorable, and his life miſerable, till the tenth of April, when I was deſired to ſee him again.

I had already reconſidered the ſufferings of this unhappy youth, and was led to imagine, from the violent effects of the rhubarb and calomel, that the nerves of the ſtomach and bowels had acquired a moſt acute degree of ſenſibility; that all his complaints aroſe from this cauſe; and I now examined with a view to this point, by laying my hand upon the abdomen before the fit came on.

The patient being reduced nearly to a ſkeleton, I could very clearly diſcover, that the meſentery firſt roſe into hard knots; ſpaſms of the back of the diaphragm immediately

mediately followed, which as quick as lightning were communicated to every part of the body, and gave me farther reaſon to think I had been right in my conjecture. I had already thought of the balſam of Peru, as a remedy to eaſe this patient, therefore, at the coming on of the next fit, I gave him upon ſugar a large tea ſpoonful (more than a drachm) of this medicine *, which inſtantaneouſly took away the pain in his wriſts and knees, and made him perfectly eaſy in every part of his body.

An hour afterward a return of the ſpaſms was entirely prevented by a like doſe; and by taking the ſame quantity regularly three times a day for a week, and then twice a day till he had taken three ounces, drinking about four ounces of warm tar-water after each doſe, he was

* When balſam of Peru is mixed with the yolk of an egg, and made into a draught, it is not ſo efficacious as when given in this ſimple manner; probably becauſe it is changed by the egg: nor ſhall we ever know the uſe of ſimple medicines, till we leave off the practice of altering them by joining ſyrups, conſerves, and the like.

per-

perfectly cured, without the leaſt return or ſymptom of his complaint.

CASE VII. "A girl of nine years, as often as one "of her feet was extended, ſo as to bring "it nearly to a right line with the leg, and "conſequently greatly to ſtretch its liga- "ments and tendons, was inſtantly ſeized "with a moſt violent convulſive cough, "which continued, without intermiſſion, "as long as the foot was kept in that po- "ſition." We ſhall underſtand how this cough was produced, by reflecting, that not only the brain in the ſtretched part, but in every part of the body, from being one continued ſubſtance, was irritated; and very probably this girl had that diſeaſe in her nerves, which produces ſpaſmodic irritability.

CASE VIII. A gentlewoman, ſeventy years of age, had been ſeized with a paralyſis of the left ſide, and though ſhe recovered the uſe of her arm, her leg remained in a very feeble ſtate, and in a few years an ulcer, with the moſt acute ſenſation, gradually formed

formed itſelf near the ancle. Upon touching it with lint, the moſt exquiſite pain followed, ſpaſms were inſtantly brought upon the thorax of the ſame ſide, and we were obliged to proceed with the utmoſt caution in our dreſſing to avoid theſe ſymptoms, which, notwithſtanding, we had ſeveral opportunities of obſerving during the cure.

Theſe caſes farther prove a general conſent, by the expanſion of the brain.

Perhaps we cannot have clearer inſtances than theſe caſes, to ſhew the immediate connection betwixt every part of the brain expanded over the muſcular fibres; eſpecially the caſe of the locked jaw, in which there was not any occaſion for conjecture, or dependence upon uncertain experiments. It was evident to the ſight, that the effect of irritation upon a ſmall number of fibres was communicated as quick as lightning to every fibre in a large ſore, and from thence to every muſcle in the body: nor could a train of gunpowder, upon being fired, have given a ſtronger conviction in what manner the fire

fire was communicated from one end of the train to the other. We are farther well aſſured, by the experiments mentioned, that ſpaſms of the muſcular fibres are always brought on by irritating the brain connected with them: ſo that from the whole it appears, that increaſed irritability does not confine itſelf to the part firſt affected, but is communicated from thence to every part of the expanded brain. Hence by taking off the increaſed or preternatural irritability of the affected part, we frequently reſtore every part of the body to its natural ſenſation. Nor are there numberleſs inſtances wanting to prove, that whatever impreſſions are made upon the brain, in which the will is not concerned, whether reſiding in the head, or in the extremities, either by medicines, or by any other cauſe, they are immediately with greater or leſs force conveyed through the whole of this one continued ſubſtance, like the electrical ſpark to every part of *a proper conductor*. Otherwiſe how comes it to paſs, that

that a fit of the nervous aſthma is relieved by a doſe of the *lac ammoniaci*, as ſoon as it gets into the ſtomach? Or in what manner is the poor dog deſtined to diſſection, inſtantaneouſly convulſed, and deprived of life in a few moments, by a ſmall quantity of laurel water, communicating its deadly influence, from the nerves of the ſtomach, to the whole body?

However, in the caſe of the locked jaw, we are to remember, that ſpaſmodic irritability was the conſequence of inflammation; and we have frequent inſtances in ſores, where inflammatory irritability comes upon, or is added to, ſpaſmodic iraitability: in which caſe, it ſeems to act with a double force, and often produces both a fever and nervous ſymptoms. For inſtance, an ulcer is extremely ſenſible and irritable, from that diſeaſe in the brain ſpread upon the muſcular fibres we have ſpoken of; and if the part becomes accidentally inflamed, a fever, with hyſteric ſymptoms, will frequently come on, with

more violence than if the ſame accident had happened to a ſore in a healthy ſtate.

Inflammation is not confined to a denſe fizy blood, as inſtances in practice evince.

But inflammatory irritability is not confined to a thick fizy blood, it alſo accompanies a putrid diſſolution of the blood and juices; and there is great inflammation in every putrid fever. Where putrid blood, or other putrid matter, is pent up in ſores, it inflames and corrodes the parts, with which it comes in contact, and brings on a fever. Being abſorbed, it undoubtedly, in like manner cauſes inward inflammation; becauſe it brings on a fever, (often in the beginning with a ſtrong full pulſe) and deſtroys the *craſis* of the blood. Indeed, we have every reaſon to believe, that inflammation entirely depends upon nervous irritation; and there is not any thing which more powerfully irritates the nerves than putrid matter: wherefore inflammation and this kind of fever ſeem to be inſeparable; all which hints will be extended into practice as we proceed.

ON

IRRITABILITY

IN GENERAL.

ADVERTISEMENT.

WE have uſed the words Irritability, Irritableneſs, and Erethiſm, ſynonymouſly.

DISSERTATION III.

ON

IRRITABILITY in GENERAL.

HALLER thought irritability reſided in a mucus, and that no parts of the body were in this ſtate, but thoſe which could be made to ſhorten themſelves upon being irritated*; a miſtake we have already reprehended †: and it ſeems generally to be agreed, that every part is irritable which is capable of being fretted by a ſtimulus, whether it is put into motion or not. We may inſtance the ſkin, which that writer ſaid was not irritable; for though it cannot be made to ſhorten its fibres by irritation, yet the ef-

The general opinion concerning irritability.

* Diſſ. on Senſ. and Irrit. ſect. 2.

† Firſt Diſſ. p. 154, & ſeq.

fects of bliſters are evidences of its irritability. The truth is, the effects of irritation upon the human body are not only mobility or ſpaſm, but greater ſecretion; for at one time it produces ſpaſms, and at another an increaſe of heat, with a greater flow of humours to the irritated part.

The effects of irritation upon the human body.

Every part of the body then that can feel, is irritable, or, in other words, capable of being more or leſs fretted, according to the ſtate of the nerves. But there is a natural, and there is a morbid or preternatural irritability; and even in each of theſe there is great variety. It is generally imagined, from the quickneſs of the pulſe, that children are more irritable than adults; and beſide this, there ſeems to be a difference in natural irritability, from a particular ſtructure or temperament of body; becauſe we may obſerve, in the application of topics, that the ſame degree of ſtimulus does not always affect in the ſame manner. In ſome habits, ſimple plaiſ-

What parts of the body are irritable.

Different kinds of irritability.

Natural irritability,

in which there is a difference.

plaiſters, or mild ointments, are not only applied without inconvenience, but even with advantage: in others, they will occaſion bliſters, or in ſome degree irritate the part upon which they lie; and have been known to excite a violent inflammation and ſwelling. If we examine the ſkin, in theſe inſtances, we ſhall generally find it more delicate than common, and the irritableneſs to be hereditary; becauſe it is the ſame in a whole family, and happens to their deſcendents: and every diſeaſe which is hereditary, muſt, no doubt, be owing to ſtructure. In the Eſſay on the Gout, we ſhall demonſtrate the truth of this doctrine; and if irritability of one kind ariſes from ſtructure, may it not differ *ad infinitum?* The ſame may be ſaid of irritability brought on by the abſorption of morbid matter. The variolous matter, by affecting the ſolids, brings on one kind, the bite of a mad dog another; and ſo on in numberleſs other inſtances.

Hereditary irritability owing to ſtructure.

Of erethiſm, preternaturally increaſed, we have already ſpoken in the laſt diſſertation, under the names of inflammatory and ſpaſmodic irritability; uſing theſe epithets to ſignify the diatheſis with which it is accompanied, in order to lead us immediately toward the cure *. Nevertheleſs there were ſome things left unnoticed, regarding the difference betwixt irritability from ſtructure, and from diſeaſe. The *viſcera*, eſpecially of the lower belly, are often the ſeat of morbid irritability throughout the whole body. I believe the increaſed irritability in intermittents always takes its riſe in the abdomen; and in thoſe troubled with a viſcereal fever, the body, by nervous connection, is often in a moſt irritable ſtate, being ſcarcely able to bear a blaſt of wind, the haſty ſhutting of a door, &c. and yet their nerves in general are not fretted by plaiſters, in the manner of thoſe ſpoken of under increaſed

Irritability from ſtructure, and from diſeaſe.

* See p. 172.

natural

natural irritability. The ſame may be ſaid of that kind of irritability which attends the gout; though there is no diſeaſe in which the nerves are more eaſily irritated by other cauſes. I knew a hypochondriacal gentleman, whoſe feelings were ſo very acute as to make life uncomfortable, under any ſtate of the air, capable of giving a diſagreeable ſenſation to the nerves: in particular, I remember he was thrown into violent convulſions, by a bricklayer, at work, chipping bricks within his hearing, one morning when he lay in bed: and yet in ſome accidents which happened to him at different times, I had opportunities of ſeeing that ſores in him healed readily by common dreſſings. When he died, I had occaſion to open the body, and diſcovered, I believe, the cauſe of his ailings, for I found the liver of an aſh colour, exceeding ſmall, and perfectly flabby.

The difference betwixt general irritability brought on by local inflammation, and by a bad habit of body.

From what has been ſaid it appears, that local inflammation brings on a general ſtate of inflammatory irritability; and yet this differs much from irritableneſs accompanying a hot temperament of body, brought on by any particular mode of living, &c. In the former, irritating ſubſtances have no remarkable effect upon any part of the body, except the local affection; whereas in the latter, they are not unfrequently attended with dreadful conſequences. A man, about fifty years of age, pricked his finger with a fiſh bone; an inflammation immediately followed, and extended itſelf to the whole arm, which ſwelled violently: matter was very ſoon formed, ſuddenly abſorbed, and a violent diarrhœa followed, which in a day or two carried off the patient. Nor is it neceſſary to recite any more caſes of this kind, to ſhew that acrimony in the juices increaſes morbid irritability.

It

It may often happen that different kinds of irritability affect the patient at the ſame time; and though, as we have obſerved, they may increaſe each other, yet they continue diſtinct diſeaſes, and require the junction of remedies, which belong to each of them. If fever is attended with hyſterical ſymptoms, as happens in the puerperal fever, antiphlogiſtics alone will not conquer the ſymptoms. In the ſlow nervous fever, the fever itſelf is to be ſubdued with cool air, &c. but nervous energy is to be ſupported with wine and other cordials. If a fever happens to accompany the hydrophobia, it may be abated by bleeding and antiphlogiſtics; but the irritability accompanying the original diſorder, is not to be removed by theſe means. A lady was ſo extremely irritable, that upon ſetting her foot awry at any time, a vertigo immediately came on: the ſame happened whenever ſhe preſſed her hand againſt any hard ſubſtance; and her ſkin was, at the ſame time,

When different kinds of irritability happen together, in what manner to be treated.

time, ſo remarkably irritable, that the mildeſt ointment or plaiſter could not be uſed without great inconvenience. It was eaſy, however, to diſcover, that plaiſters had ever been diſagreeable to the ſkin; but the other affection had ariſen, within a few years, upon taking cold: and though ſhe recovered, by nervous medicines, from this complaint, the irritability of the ſkin ſtill remained. Have we not frequent opportunities of obſerving, in viſcereal and intermitting fevers *, in increaſed irritability from inflammation, &c. that though the preternatural erethiſm is entirely removed, a natural irritability, ſuſceptible of the leaſt irritation upon the ſkin, remains? Theſe hints are mentioned to ſhew, that it may often be neceſſary to purſue different intentions of cure at the ſame time; and as there is ſuch variety in irritability, we wiſh epithets could be applied to diſtinguiſh them, that the word irritability

* See Treatiſe on Inflammation.

might

might have a determinate meaning, ſo as not to be employed in a vague manner.

But, as a farther proof of the truth of this diſtinction, we may call to mind what we have before obſerved, that ſedatives, oppoſite in their nature, are neceſſary to allay irritability under different circumſtances; opium, in many inſtances, being incapable of affording any other than temporary relief. Some of theſe ſedatives we have already mentioned*, and ſhall enlarge this ſubject when we ſpeak of the kinds of irritability requiring their ſeparate uſe; though it may here be obſerved, that words will be inſufficient for fully diſtinguiſhing one kind of natural irritability from another. In external diſeaſes, this can only be done by a view of the part, in the manner we learn the difference betwixt human faces, which may be readily conceived, though not well deſcribed. The effects of remedies, and the ap-

* Introduction.

pearance

pearance of the diſeaſed part, will, however, in time make the difference familiar to the eye, and lead us to the uſe of thoſe remedies which are found proper by experience. Wherefore we wiſh to enforce the neceſſity of attending cloſely to the minutiæ in external diſorders; that we may not, through miſtake in the choice of remedies, bring on a train of troubleſome, or perhaps dangerous ſymptoms, that may lead us from a right method of treating the patient. This happened in ſome of the caſes mentioned in our Introduction; which mal-treatment, and a diſſuaſive from the entire uſe of ointments in ſores, would have been avoided, had the ſtate of irritability and the power of particular ſedatives been attended to and known.

Nor are theſe remarks to be confined to external diſorders; for in irritability from an internal cauſe, do not we often find ſedatives of different kinds neceſſary to accompliſh a cure? When we are not cer-

tain

tain of the nature and ſeat of the diſeaſe, we are often obliged to try ſeveral remedies before we hit upon the right; the ſymptoms being inſufficient to direct us to a proper choice. The only general rule I have learned, in treating morbid irritability, is to diſtinguiſh it into

Irritability with nervous energy { unaltered, diminiſhed, increaſed;

remembering that the ſame degree of irritability attending diminiſhed nervous energy in fevers, is much more dangerous than where nervous energy is increaſed; as the pulſe table will ſufficiently ſhew. By this method we have ſome plan to proceed upon; and though we ſhall not always ſucceed immediately in relieving the patient, yet, I believe, we ſhall commonly avoid doing harm. In the firſt inſtance, opium and other ſedatives, which the particulars of the caſe may ſeem to indicate, may be given without apprehenſions of danger

danger; provided we remember that the temperature of body, in this inſtance, is commonly in a middle ſtate; and that either hot or cold remedies ſhould be avoided, and preference given to thoſe which are a mixture of both.

When nervous energy is diminiſhed, opium is injurious. The native balſams, fœtid gums, eſſential oils, and all thoſe warming remedies, which increaſe the vigour of the nerves in general, do ſervice. And where nervous energy is increaſed, ſmall doſes of laudanum and antiphlogiſtics joined, are preferable to other treatment. However, there are ſome peculiarities in conſtitutions that require particular remedies: thus, though the balſam of Peru, for inſtance, frequently gives relief, when applied to pale ſenſible ulcers, in leucophlegmatic habits, yet it ſometimes happens, without any apparent cauſe, that it gives exquiſite pain, and we are obliged to uſe native balſams, diveſted of their heating

heating properties, or ſuch other applications as we find beſt agree with the patient. Juſt ſo it is in internal complaints; for in hyſteric caſes do not camphor, caſtor, valerian, aſafœtida, balſam of Peru, &c. ſucceed by turns? Such is the difference in the nature of irritability, that a ſingle grain of mercury will ſalivate ſome perſons, whereas ten times that quantity will have no ſuch effect in others. When it happens in the viſcera from obſtruction, one kind brings on hypochondriacal ſymptoms, another madneſs, another hyſterics, and a fourth the ague, &c. and all different from that brought on by the canine poiſon; which otherwiſe might be treated with the ſame degree of certainty as other complaints.

Hitherto we have ſpoken of general irritability, and there are ſome peculiarities in local irritability that deſerve notice.

It is agreed, that an inflamed part becomes more irritable; and when repeat-

Irritability of parts increaſed from repeated inflammation.

edly inflamed, I obſerve the irritability is at each time increaſed and remains long afterward, though the inflammation entirely diſappears: without due attention is paid to theſe particulars, much miſchief may be done by topical applications. I might, indeed, bring a multiplicity of inſtances in ſupport of this aſſertion; but a few will be ſufficient for the purpoſe.

Case I. A man had an ulcerated leg, which had been very frequently inflamed by an eryſipelas, that came on in conſequence of abſorbed matter. When the inflammation had diſappeared ſome time, the ſurgeon dreſſed the ulcer, which was foul, with a digeſtive compoſed of yellow baſilicon and precipitate; upon which, in a few hours, a moſt violent inflammation ſeized the whole leg, and brought on ſome alarming ſymptoms that time and ſedatives relieved.

Case II. Another man had much inflammation and various abſceſſes in his thigh, from a com-

compound fracture. When theſe were over and new fleſh aroſe above the level of the ulcer, the ſurgeon applied precipitate, which brought on freſh inflammation, rigors, abſceſs, and a hectic fever; but, upon the matter being diſcharged, he recovered under milder treatment.

A lady had a perpetual bliſter continued many weeks upon her neck, on account of a pain in her head; which brought on ſuch a degree of irritability in the ulcer, that it could not be healed by the common mode of dreſſing, though not the leaſt degree of inflammation appeared. Even the moſt ſimple ointments gave exquiſite pain, and occaſioned a diſcharge of lymph; but upon double linen cloths being wet in cold water, and kept moiſt upon the part, ſhe was cured. Theſe are ſufficient hints to avoid cautiouſly whatever may irritate under ſuch circumſtances, which are often to be met with in the practice of medical ſurgery. Nor are theſe remarks to be confined

Case III.

to external diſorders; for when the lungs or liver, &c. have been repeatedly inflamed, they are inflamed again upon the ſlighteſt accident; and, like external diſorders under this predicament, require the moſt gentle treatment. Is it not probably owing to the ſame cauſe, that when the habit of body has been rendered more irritable by mercury, it is afterward, though at a conſiderable diſtance of time, more eaſily affected by this mineral? Such conſiderations may prevent our miſtaking one diſeaſe for another, as happened in the fourth example in our Introduction. And I am apprehenſive, that fault has frequently be found with the fluids, when the ſolid parts of the body ought to have been principally attended to in the cure.

ON THE

PULSE.

ON

THE PULSE.

THE heart ſeems to contract in proportion as it is more or leſs affected by a ſtimulus. The pulſe is full or ſmall, according to the quantity of blood forced into the arteries: ſlow, quick, ſtrong, or weak, according to the ſyſtole of the heart; and hard, or ſoft, according to the tenſion of the arteries: wherefore the pulſe, in moſt caſes, points out the degree of irritability, whether increaſed or diminiſhed; the quantity of blood moving in the veſſels; the motion and force of the heart, and the ſtate of the arteries. But though inflammatory irritability, may be accurately eſtimated by the pulſe, yet as it terminates differently under different circum-

ſtances, we will form a pulſe table, upon Dr. Heberden's plan, which will lead us to conſider the diſeaſe inſtead of a ſymptom. For though "the pulſe is in many "caſes, a uſeful index of the ſtate of the "health, yet it is no certain one in all; and "without due regard to other ſigns, it "may miſlead us." But we muſt firſt obſerve, that the pulſe of children, "under "two years old, ſhould be felt while they "are aſleep*: in adults, after converſing "with them, and then keeping the finger "upon the artery a conſiderable time together, to prevent our being deceived by "a quickneſs of the pulſe, commonly "brought on by ſome degree of agitation "in the mind of the patient†."

* Dr. Heberden, † Hippocrates.

A PULSE TABLE,

Drawn in part from Dr. HEBERDEN: MED. TRANS. vol. ii.

STATE of Children's PULSE in Health.

Juſt born	130 to 140
1ſt year	108 to 120
2d year	90 to 100
3d year	80 to 108
4th 5th and 6th	Nearly ib.
7th	72 or more
12th often	70

IN DISEASES.

INFLAMMATORY CLASS.

1. Inflammatory fever two years old } 144 has ended in death.
   D° four years old 156 } have recovered.
   D° nine years old 152 }
2. Dentition - - 120 or more not dangerous, if convulſions do not interfere.

MISCELLANEOUS CLASS.

3. If quickened ſo as to exceed the utmoſt healthy limits by } 10 { Indication of ſome diſorder.
4. A very ſlight fever in the firſt year } 140 to 160 without danger.
   Worm fever - - 100 or 120 not dangerous.
5. Signs of conſiderable illneſs, and below the loweſt limits of natural ſtandard } 15 or 20 { Indication of brain being affected.

STATE of the PULSE of Adults in Health.

A little below	60 to 80	the pulſe of women ſometimes more.
Sometimes near	90	
Increaſe after a full meal	10 or 12	

IN DISEASES.

INFLAMMATORY CLASS.

1. In inflammatory fever fewer than	100	danger generally not very great.
Beginning of danger	120	ſeldom exceeds, in this inſtance, according to HEBERDEN, without delirioufneſs and death.
2. Hectic fever from ill conditioned ulcers, or from ſcirrhous diſorders in any part of the viſcera, in an inflamed ſtate.	90 to 120	continues for many months.
3. External inflammation, ſymptomatic fever attending wounds, paronychia maligna, &c.	120 or 130	no ways dangerous.
4. Eryſipelas - - -	120 or 130	d°, unleſs the head is much affected.
5. Eryſipelas, where the head and face are greatly affected, though only at	50	may end in death.
6. Acute Rheumatiſm	120	often without any ſort of danger.
7. Gout - - - - -	120	d°, if the head and ſtomach are unaffected.
8. In injuries penetrating the ſkull, ſoft, and at	50 or 60	yet the brain may be violently injured, and the event exceeding hazardous.
9. In injuries of the head ſerrated at	100	The membranes are commonly inflamed in a ſtate of tenſion, may ſuppurate, and if the matter is confined, death be the conſequence.

10. If conſiderable laceration in the cortical part of the brain	50	or 60	has recovered, where the matter ariſing could be freely diſcharged through a proper opening.
11. In peripneumonies, from a wound, &c. in the lungs, when oppreſſed and under	60		there is great danger.
12. D°, from internal cauſe	60		ditto.
13. In violent bruiſes of the abdomen, with inward dull pain, though under	100		death will often happen.
14. In inflammation of the abdominal viſcera, from any cauſe, with diſtention, tho' under	100		great danger.

PUTRID CLASS.

15. In putrid fevers, occaſioned by contuſed wounds	100	not very alarmiug.
16. D°, when at - -	120	May recover if abſorption of putrid matter, in large quantity, can be prevented. If not, there is great danger of a fatal termination.
17. Putrid fever, from contagion, in an advanced ſtage.	120	Often terminate in death.

MIS-

MISCELLANEOUS CLASS.

18. If quickened ſo as to exceed the utmoſt healthy limits by	10		Indication of ſome little diſorder.
19. In low fevers, and in exhauſted old men, often below	100 and	90	If attended with want of ſleep and reſtleſſneſs, and a parched tongue, end in death without comatous or lethargic ſymptoms.
20. Comatous affections in infectious fevers at	84		Sign of brain being affected.
21. Aſthmatic people ſeized with uncommon bad fit	120		very rarely recover.
22. Before critical ſwelling or depoſit of matter	150		And yet a recovery happens.
23. In deep ſeated pains in the head, with general weakneſs, and comatous affections, though ſoft, open, and unaffected at	50 or	60	end often in death.
24. Comatous fevers with deliriouſneſs, rapid loſs of appetite and ſtrength, ſleepleſſneſs, quickneſs of breathing, and great thirſt.	60		very little hope.

PUER

PUERPERAL FEVERS.

25. Milk fever, with turgid breaſts.	120	not dangerous.
26. In puerperal fevers, from inflammation of the uterus or viſcera, accompanied with pain in the abdomen, and flacid breaſts.	120	May recover, if aſſiſtance is called in time. Tho' more die than recover.
27. D°, when weak and ichorous ſtools are frequently diſcharged,	120	exceeding dangerous. The ichorous ſtools being a ſign that the ſtagnating fluids are become acrid and capable of diſſolving the viſcera.
28. D°, from the abſorption of putrid matter from the uterus,	120	exceeding dangerous; if more frequent, ſeldom recover.

GENERAL

GENERAL OBSERVATIONS.

I. " THIRST, quickneſs of breathing, averſeneſs from their food, and, above all, the want of ſleep, enable us better than the pulſe to judge of the degree of fever in infants."

II. Heat and a quickened pulſe, accompanying pain, are ſigns of local inflammation.

III. I agree with Dr. Heberden, that ſuch trifling cauſes will occaſion intermitting pulſes; and that they are not worth regarding in any illneſs, unleſs attended with other bad ſigns of more moment. Dr. Solano affirms an intermitting pulſe, when not habitual, to be the ſign of a critical diarrhœa, where there is a ſtrength ſufficient to perform a criſis; but this I have not ſeen verified in my own practice, or that of other phyſicians.

IV. It is, I believe, true that a quickened pulſe more certainly denotes danger

than a natural one does ſecurity, where there are ulcers, or where diſorders of the viſcera are ſuſpected; my obſervations correſponding with thoſe made by Dr. Heberden, that perſons ſometimes die of cancerous ulcers of the anus, teſticles, proſtate gland, and of almoſt all the viſcera, without ever ſhewing any preternatural quickneſs of the pulſe.

V. "In an illneſs where the pulſe all "at once becomes quiet, from being fe- "veriſhly quick, while all the other bad "ſigns are aggravated, it is a proof, not "of the decreaſe of the diſorder, but of "the leſſened irritableneſs of the patient, "the diſeaſe being tranſlated to the brain; "and a palſy, apoplexy, or death is to be "apprehended."

VI. If the pulſe from being quick, hard, and contracted, becomes ſoft, open and more ſlow, with other favourable ſymptoms, a recovery may be expected.

VII.

VII. When the new granulations, in fores, look healthy and vigorous, a quickneſs in the pulſe, though at 120, is not at all alarming.

VIII. The aſpect of the ulcer, in injuries of the head, is more to be depended upon than the pulſe.

IX. From the foregoing table it is evident, that a quick pulſe does not denote equal danger in inflammatory as in putrid diſeaſes; owing probably to the cauſe aſſigned in the Diſſertation on Irritability in general.

X. Much more about the pulſe may be found in Hoffman, by thoſe who will be at the trouble of reading him.

ON THE

NATURE AND CURE OF FEVER;

BEING A SHORT PRACTICAL ABSTRACT,

WITH ADDITIONS, FROM AN

ESSAY TOWARD AN IMPROVEMENT

IN

The CURE of thoſe DISEASES which are the CAUSE of FEVERS.

ON THE

NATURE AND CURE OF FEVER.

THAT fever is not an effort of nature has already been ſhewn *, and it will hereafter appear, from plain and ſimple facts, that it is an accumulation of preternatural heat or fire, ariſing from various cauſes; that it is an impediment to nature, and a moſt dangerous ſymptom; that the practice of making uſe of it, as an inſtrument to cure diſeaſes, has deſtroyed more people than the ſword; that it ought to be extinguiſhed as ſoon as poſſible, to prevent fatal conſequences, as it is frequently the fever, and not the diſeaſe, which kills the patient: and we agree in

* Introduction.

opinion with Rhazes, that to omit the *extinction* of the fire, is to ſuffer the patient to run headlong to deſtruction.

Now removing the cauſe of fever in time will often produce this effect, of which we ſhall hereafter treat in their proper places; but this cannot always ſo ſoon be effected as might be wiſhed, and the *fever itſelf* muſt be ſubdued, or kept under, by a proper degree of cold, as the moſt certain antidote to heat; that nature may be at liberty to free herſelf from the diſeaſe, and medicines have their proper effect without interruption. For this purpoſe, the patient ought to be kept in a ſpacious room where he can draw a great deal of pure cool air, and be very lightly covered, ſo as not to be ſuffocated by many clothes. His bowels ſhould be kept open by gentle cooling purges; and loſs of blood in ſome inſtances, which we ſhall hereafter particularize, will be neceſſary. Medicines ſhould be given, which are ca-

pable of abating heat, by an innate cooling quality; of which kind are *nitre*, the common *ſaline draughts*, made of *juice of lemon, and ſalt of wormwood*, &c. *regenerated tartar*, and the like: for though theſe remedies may have other properties, yet they abate heat by immediately communicating coldneſs to the nerves. For the ſame reaſon, the patient ſhould drink cold water, or cold toaſt in water, in proportion to the degree of heat; the regimen ſhould agree with the extinguiſhing plan, and where exceſſive heat makes it neceſſary, the windows and doors of the chamber ſhould be ſet open, that the patient may be ſufficiently cooled by a free currency of air.

The above doctrine regards only fevers, in which nervous energy is increaſed, ſuch as thoſe brought on by any kind of ſimple inflammation; but where nervous energy is reduced lower than it ought to be, it will be neceſſary to ſupport it, and to

extinguiſh the fever by cold at the ſame time: for which purpoſe, as the caſe may require, antiſeptic or other cordials, either with or without cooling medicines, as the patient's ſtrength and heat demand, may be joined. In ſlow nervous fevers, and in all contagious fevers, the pulſe and ſymptoms of nervous oppreſſion, ſooner or later, point out that the vital powers are weakened and require ſupport. Every medical reader knows that the ancients gave alexipharmics as antidotes to the poiſon, which they ſuppoſed occaſioned the diſeaſe: and though their theory might not be perfectly true, reſpecting the effect of their remedies, yet their practice ſeems to have been right; as they might often ſupport nervous energy, and enable the patient to get through the com-

CASE I. plaint. A young woman was ſeized with an epidemic fever; nervous power ſeemed to be almoſt deſtroyed by the ſedative *miaſmata* which occaſioned the diſeaſe; her pulſe,

pulſe, though quicker than uſual, was under a hundred; her tongue was not very dry, ſhe was delirious, a conſtant tremor attended, and the common offices of nature were involuntary. Her room was kept full of pure cold air. She took the *decoctum ſacrum* of Fuller, and drank barley-water, &c. and recovered. Nor is this the only inſtance of many I have ſeen, where this remedy (which theory kicked out of doors) had the ſame deſirable effect under like circumſtances: and where leſs warming medicines are ſufficient, is not the *pulvis contrayervæ* daily uſed with ſucceſs upon the ſame principles? A huſ- CASE II. bandman was ill of a ſlow nervous fever, that raged in the neighbourhood, and had been delirious ſome days when I firſt ſaw him: his pulſe was weak, about ninety; his ſtrength much diminiſhed, and his heat not great. I ordered his room to be kept cool, his bowels to be opened by a clyſter, and that he ſhould take a glaſs of Madeira

wine every three or four hours, drinking toaſt and water, and wine betwixt whiles: by which treatment his delirium left him, and he recovered. This is no new practice, for Hippocrates in a ſimilar inſtance, gave wine and water twice a day, but the coldeſt water the reſt of the time. Indeed, I have been led to think there is not any remedy equal to wine, through the whole of this kind of fever; having ordered it to very many with the moſt deſirable ſucceſs, after clearing the *primæ viæ* with proper evacuants. This, I think, is the firſt ſtep to be taken in fevers brought on by contagion; as the *miaſmata*, producing the diſeaſe, ſeem firſt to affect this canal, and are often effectually removed by vomits: which hints are ſufficient to point out our intention, and in the Eſſay on Fevers this matter is more fully diſcuſſed.

A

TREATISE

ON

INFLAMMATION,

AND

ITS CONSEQUENCES.

PREFACE.

FROM the multiplicity of treatiſes written upon that ſubject, it might be imagined the doctrine of inflammation muſt be now thoroughly eſtabliſhed; but whenever any ſubject *admits* of a diverſity of opinion, it cannot be rightly underſtood: for, I believe, it will be allowed me, that wherever truth appears, it will carry ſelf-conviction along with it, ſo as to remove all poſſible ground of controverſy. Thus, notwithſtanding, the principal writers on inflammation ſubſcribe to a ſelf-evident truth, that irritation is one cauſe of this diſeaſe; yet, as they entertain different ſentiments as to the manner in which it brings about this effect, and how inflammation is cauſed, when external *ſtimuli* are not applied, its true nature ſeems not yet to be aſcertained. I have, therefore, carefully reviſed my obſervations on the ſeveral appearances in this complaint, and

beg

beg leave to offer the reſult of them, to thoſe whoſe minds are open to conviction, and ready to receive truth. I will juſt premiſe, that by *lymphatic* and *capillary veſſels*, are meant thoſe lateral lymphatics, which have an immediate communication with the artereal ſyſtem, and carry lymph from the blood. The abſorbent ſyſtem is a different order of veſſels; and the fluids, which paſs through them, move in a different direction.

CHAP. I.

ON INFLAMMATION IN GENERAL.

THE Greeks very properly gave the name of φλεγμονη or φλογωσις, from φλεγω, *uro*, *to burn*, to the diſeaſe the Engliſh call inflammation; becauſe it is the burning or a fiery heat in the affected part, and not redneſs, pain, or tumor, which ſome have taken into their definition, which characteriſes the complaint. Redneſs, pain, and tumor, are ſometimes long found in affected parts, without any ſigns of their being inflamed. Upon impartial enquiry, I believe, it will appear they are only attending ſymptoms on inflammation; and that neither the red blood paſſing through the lymphatic veſſels (whether moving ſlow or quick), pain, tumor, or ſpaſm are capable of producing preternatural

Inflammation defined.

Blood not the cauſe of it.

natural heat: and that inflammation is in all inſtances a nervous affection, independent of theſe cauſes.

Proof. Blood having eſcaped out of its veſſels into the interſtices of the fibres, or ſometimes venal blood ſtagnating in the extremities of the veins, gives redneſs to the eye, but is diſtinguiſhed from inflammation by its being deſtitute of preternatural heat and its conſequences; and by its going off ſpontaneouſly without diſturbance. Nor does any kind of extravaſated blood, while it remains free from acrimony, or venal blood confined in the narroweſt extremities of the veins, ever produce this diſeaſe. Inſtances of the former we daily ſee in contuſions, and the latter is ſometimes manifeſted in tumors preventing a return of the venal blood to the heart.

A butcher once ſent me a ſheep's bladder uncommonly large; its coats were thicker than uſual, and all the veins were

ſo

ſo diſtended with blood, that even the membraneous fibres appeared to be a ſet of veſſels filled with this fluid; yet this ſheep muſt have been free from inflammation and pain, becauſe it was exceedingly fat when killed. Upon examination, I found an indolent tumor about the neck of the bladder, which preſſing upon the principal veins, prevented the blood from returning: but upon putting the bladder into water, to preſerve it for farther enquiry, the blood was waſhed out of the veins, and it nearly regained its natural colour.

In a varix of the human bladder, the patient is free from inflammation, becauſe he has not any pain or fever. I have opened bodies that had been afflicted with this diſeaſe, which had no other ſymptom, while living, than exceſſive weakneſs, from a conſtant and violent diſcharge of venal blood; and found the bladder in a ſtate ſimilar to that deſcribed. A varix in the legs, where the blood ſtagnates in the ex-

extremities of the veins, is alſo unaccompanied with inflammation, unleſs it is ſo great as to cauſe conſiderable obſtruction in the neighbouring parts. Nor does *arterial blood* by entering the lymphatics, though it gives redneſs, ſeem to bring on any greater diſturbance than blood which is extravaſated or obſtructed in the extremities of the veins.

If a cupping-glaſs be applied to the ſkin, we ſee the part is ſwelled and becomes red, from arterial blood ruſhing into veſſels which do not uſually carry blood, yet without inflammation. Fomentations may be applied till the part becomes red, from the ſame cauſe, and with the ſame conſequences. Various kinds of violent exerciſe will force arterial blood into the lymphatics, without giving heat or pain; and I have known a vomit force blood into the lymphatics of the *tunica conjunctiva*, with little or no inconvenience, though the eye look very red.

In

In legs which have been weakened with ulcers, eſpecially in corpulent people, it is very common for them to become red, from arterial blood forcing its way into the lymphatics: they frequently look equally red with parts that are inflamed. Upon preſſing them with a finger the ſkin acquires its natural colour, in the ſame manner as in an eryſipelas; but upon removing the preſſure, the blood immediately ruſhes again into the cutaneous veſſels, and yet the legs are perfectly cool, and free of pain. In the *ectropium*, the reſidence of the arterial blood in the lymphatics of the *tunica conjunctiva* is very obvious, often for many years together, without inflammation: and in all theſe inſtances the blood eſcapes into its proper channel without diſturbance. Laſtly, in an *aneuryſm*, and an *ecchimoſis*, does not the blood remain long without the leaſt ſigns of its irritating? From all which may we not ſafely infer, that the

blood,

blood, in its natural ſtate, does not irritate ſufficient to inflame, and that this diſeaſe is not cauſed by an *error loci* of its red globules?

Pain not the cauſe of inflammation.

Pain alſo has, from the days of Hippocrates, been generally ſuppoſed to occaſion inflammation *; particularly that ariſing from diſtraction, or diſtention of the nerves. But whoever ſcrutinizes this matter will have occaſion to doubt the truth of this opinion. For though pain, perhaps, is always a conſequence of local inflammation, yet there is not any evidence which proves, that it ever produces it. The nerves in the membranes, covering the bones, are often from diſeaſe put upon the ſtretch, and give moſt exquiſite pain; but this pain is without the leaſt inflam-

* The only writer, I know, who has mentioned any thing that has a tendency to contradict this opinion, is Dr. Heberden; who ſays, (Med. Tranſactions, vol. ii. p. 32.) "It is often ſuppoſed that great pain will quicken "the pulſe. I am more ſure, that mere pain will not "always do it, than I am that it will:" and he gives ſome inſtances to juſtify this opinion.

mation

mation or fever, till the obſtructed fluids acquire acrimony, and irritate the nerves with which they come in contact. In white ſwellings of the joints, while the confined matter is free from acrimony, the pain is often great, and ſometimes exquiſite, for a great length of time from diſtenſion; and yet without inflammation or fever. But I have had ocular demonſtration of the nerves upon the ſtretch, which gave me a clear idea of the effects thence produced beyond conjecture.

About twenty years ago, a collier, of Meaſham, had the upper part of his foot violently bruiſed and lacerated, by an accident in the coal pits. Tumor, inflammation, and ſuppuration followed, with the uſual ſymptoms; which diſappeared as digeſtion came on. Nevertheleſs, when the new fleſh began to riſe, a violent pain invaded his toes, and the under part of his foot adjoining to them, inſomuch that he could neither get reſt or ſleep in any one

CASE I.

poſture, and yet was quite cool, and perfectly free from any ſymptom of inflammation. Opiates mitigated the pain, but it returned as violent as ever, when their effects ceaſed; nor could we, by any means, give him permanent relief, till the bruiſed membranes digeſted off, and diſcovered to us the cauſe of his ſufferings. The muſcles of a great part of his foot being left quite bare, the faſciculus of nerves, which goes to the leſſer toes, was more expoſed than could have been done by the niceſt diſſection; and a riſing of fleſh from the *extenſor digitorum brevis*, made them form an arch, like the ſtrings of a fiddle elevated by the bridge. Upon ſtill raiſing them with the ſciſſars point, in order to divide them, the pain encreaſed; but upon cutting them through, it immediately ceaſed, and never returned. Eaſing pain by dividing nerves in a ſtate of tenſion, is a very common practice in ſurgery; but I have choſen this caſe as perfectly

perfectly free from obſcurity, and fully capable of illuſtrating the ſubject by its ſimplicity. It is well known the ſciatica affects people ſeveral weeks together without ſhewing the leaſt ſign of inflammation. I very lately attended a gentleman CASE II. who had a moſt violent pain in his back, which extended through the lower part of the abdomen to his thighs, for four days together; but without either occaſioning heat or altering the pulſe: and do not people frequently undergo great pain in the head, for a conſiderable time, without the leaſt ſymptom of fever or inflammation? In the colic from lead, in the toothach, in the paſſage of gall-ſtones through the gall-ducts, in ſtones paſſing the ureters into the bladder, and in many other internal diſeaſes, the patient often undergoes the moſt excruciating pain for a great length of time, without inflammation: all which together, ſeem to prove, that pain itſelf is never the cauſe of this diſeaſe. It may be laid down as an infallible and moſt uſeful

A rule in practice.

rule in practice, that pain accompanied with fever, always ariſes from inflammation; but when no febrile ſymptom appears, the cauſe is either ſpaſm or nervous diſtenſion.

Perhaps it may be ſaid, that irritation, which is a common cauſe of inflammation, always occaſions more or leſs pain, and the ſubſequent inflammation is in conſequence of the pain thus brought on. But how can ſuch reaſoning be ſupported, when it is evident from the caſes ſelected, that the moſt exquiſite pain produces no ſuch effect? Beſide it muſt be remembered, that it is irritation which gives pain, and not pain that irritates; for if pain was capable of irritating in ſuch a manner as to bring on inflammation, it would increaſe this diſeaſe, and ſupport itſelf when once produced, like a lighted candle which continues to burn, though the match which ſet it on fire is removed. Whereas the fact is directly contrary; for remove the cauſe

cauſe of pain, and pain itſelf is incapable of keeping up inflammation. Irritating dreſſings applied to a ſore, will bring on, and keep up, violent inflammation, ſo long as they are uſed; but upon removing them, all the troubleſome ſymptoms diſappear, and fairly evince, that it is the irritation and not the pain which produces the inflammation; and that though the pain be ever ſo great, it is incapable of ſupporting, and much leſs of producing the diſeaſe of which we are treating.

Irritation.

Now, though it may be proved by innumerable inſtances, that external irritation is one cauſe of inflammation, yet it muſt be obſerved, that different kinds of irritation produce different effects *. If we irritate the brain or nerves with a knife, by pricking with a needle, by compreſſing with a ligature, or by any other kind of irritation, which is ſudden and of ſhort continuance, ſpaſms only are the

Different kinds of it produce different effects.

* See Haller on Irritability, p. 33.

conſequence ; whereas corroſives bring on inflammation : and when we reflect, that a mote in the eye as certainly produces this diſeaſe, as thoſe things which corrode, it will appear to follow, that inflammation is only brought on by that kind of irritation which keeps up a conſtant fretting of the nerves.

The manner of its cauſing inflammation not aſcertained.

However, though it is plain this kind of irritation will cauſe inflammation, it does not ſo clearly appear from any thing yet written upon that ſubject, by what means this effect is produced : for though latter writers thinking that obſtruction, without an irritation in the obſtructed part, never occaſions inflammation, have preferred the doctrine of irritation to the Boerhaavean doctrine of obſtruction *, yet they have gone very little farther toward elucidating the point in queſtion. They have only attempted to change the cauſe of heat in the affected part, from *attrition*

* See Van Sweit. Com. ſect. 371.

to

to an increaſed *velocity*, or *impetus* in the blood; without proving that an increaſed velocity *in the fluids* is capable of producing ſuch an effect.

Different opinions about inflammation.

Some ſay inflammation is owing to an increaſed *alternate contraction* in the ſmall veſſels, whether ariſing from obſtructing matter diſtracting their fibres, or acrid matter irritating them. Thoſe who ſuppoſe a hot tumor cannot be formed in any part without an exceſſive great motion of the fluids, endeavour to prove that the ſmall veſſels, inſtead of being obſtructed, become enlarged in inflamed parts; and that the blood flows, both through veins and arteries, with an increaſed velocity, and occaſions preternatural heat.

On the other hand, others, though they do not think obſtruction is to be conſidered as the primary cauſe of inflammation, yet ſay, "It is, at the ſame time, ſuffici-" ently *probable*, that ſome degree of ob-" ſtruction does take place, in every caſe

" of inflammation; and that the extremi-
" ties of the arteries do not readily tranſmit
" the unuſual quantity of blood impelled
" into them, by the increaſed action in
" the courſe of theſe veſſels." They think
" the phænomena of inflammation, red-
" neſs, heat, pain, and tumor, all concur
" in ſhewing that there is an increaſed
" impetus of the blood in the veſſels of
" the part affected, owing to an increaſed
" action of the veſſels of the part itſelf."
And imagine " inflammation may often
" be explained in the following manner:
" ſome cauſes of inequality in the diſtri-
" bution of the blood, may throw an un-
" uſual quantity of it upon particular veſ-
" ſels, to which it muſt neceſſarily prove
" a ſtimulus. But, farther, it is probable,
" the *vis medicatrix*, nature, increaſes ſtill
" more the action of theſe veſſels, which
" it effects by the formation of a ſpaſm on
" their extremities, as in all other febrile
" diſeaſes. A ſpaſm, therefore, of the ex-

treme

" treme arteries, ſupporting an increaſed " action in the courſe of the ſame, may be " conſidered as the proximate cauſe of " inflammation, at leaſt in all caſes not " ariſing from direct *ſtimuli* applied." But whether theſe opinions are leſs hypothetical than the doctrine of Boerhaave, let us now conſider: nor am I fearful of offending ſuch reſpectable authority, though I differ from them in opinion; for being in ſearch of truth, I know they will, with pleaſure, embrace every unprejudiced attempt to diſcover it.

Theſe opinions examined.

Suppoſing, what has never yet been proved, that there may be an increaſed alternate contraction in the ſmall veſſels; is this ſufficient to produce the heat obſervable in inflamed parts, by increaſing the heat of the blood? There never yet has been an experiment made capable of proving this circumſtance. It is true, an increaſed motion of the *ſolids* will increaſe animal heat; but this increaſe of heat is very

Alternate contraction in the ſmall veſſels inſufficient

to bring on inflammation, as facts prove.

very different from the heat of inflammation. If a man runs till he is exceeding hot, we feel in him a great increaſe of *natural heat*, but not any thing diſagreeable to the touch; his ſkin remains ſoft, and open, and the heat ſpontaneouſly diſappears without giving unneaſineſs. In the experiments made by Dr. Fordyce, in heated rooms * ; the human heat was raiſed to one hundred degrees, and the pulſe to one hundred and thirty-nine ſtrokes in a minute ; but without inflammation. In the chace, the active hunter often increaſes his natural heat to a great degree, for ſeveral hours together, without any detriment ; becauſe heat, in great quantity, is conſtantly diſcharged by the lungs, and by perſpiration from the body. The hunted deer brings on himſelf, by increaſed motion exceſſive heat, and yet, on being reſcued from death, he repoſes himſelf, and without ſuffering laſting inconveni-

* Med. Comment. vol. iv. p. 269.

ence, ſoon recovers his former temperature of body and agility. Were an increaſed impetus in the blood to bring on inflammation, would not death frequently be the conſequence of violent exerciſe? May we not therefore conclude, that nature, in her laws of the animal œconomy, has, by conſtantly diſcharging heat, provided againſt diſeaſe being the conſequence of violent motion, except by accident? Wherefore an increaſe of *natural heat*, excited by extraordinary exerciſe, and inflammation, ſeem to be different things; yet ſhould we even ſuppoſe them to be exactly the ſame, is the quantity of blood paſſing through an inflamed part equal to the degree of heat it poſſeſſes? Certainly it is not; for inſtance, in the little ulcer, of which we ſhall hereafter have occaſion to ſpeak, immediately following inoculation, the appearance of red blood bears no proportion to the degree of heat; and we believe the ſame rule will hold good in every inflammation.

Increaſed natural heat and inflammation different things.

If

Heat upon the inflamed part does not depend upon the velocity of the blood.

If the heat in the inflamed part depended upon the increaſed force and velocity of the blood paſſing through the ſmall veſſels, would it not, if a ſtimulus, when once ſet a going, continue its motion, notwithſtanding the firſt cauſe of increaſed action was taken away? Is not the contrary certain? But there is no proof either of a briſker circulation, or of an increaſed action in the veſſels of the inflamed part: all that has been ſaid in ſupport of this doctrine, having originated in conjecture, as a very ſlight experiment will evince. If we preſs the blood out of the lymphatics, in a ſimple inflammation of the ſkin, or in an eryſipelas where the fever is not conſiderable, and out of the lymphatics where the part is become red from blood entering theſe veſſels without inflammation; we ſhall *ſee* the circulation is not quicker in the inflamed than in the uninflamed part. Nor can the beſt glaſſes diſcover any action in them. The pulſation

tion we ſometimes feel, is no evidence in favour of theſe veſſels acting with increaſed force; becauſe it is only diſcovered in abſceſſes, where there is conſiderable obſtruction: and the blood meeting with unuſual reſiſtance in the larger veſſels of the cellular membrane, paſſes through them with difficulty, and is hence more eaſily perceived. We ſhall preſently mention ſeveral inſtances of inflammation, where it is manifeſt the motion of the blood, *and the action of the veſſels*, muſt be diminiſhed. Nor do redneſs, pain, tumor, and heat, evince the contrary. Redneſs, we have ſeen, will happen without any increaſed impetus of the blood; pain and tumor ariſe from diſtenſion, cauſed by obſtructed fluids; and the heat will hereafter appear to ariſe from another cauſe.

When an unuſual quantity of blood is thrown upon a particular part, it does not become a ſtimulus ſufficient to inflame;

Blood in its natural ſtate is incapable of producing inflammation.

as we learn, from inſtances taken notice of, where arterial blood enters the lymphatics without inconvenience: nor do I believe it has power, in any inſtance, to act as a ſtimulus, otherwiſe than by ſtriking againſt the nerves; becauſe corroſives do not produce ſpaſms*. By experiments, to be preſently mentioned, it will appear, that it is not neceſſary the blood ſhould be more irritating than pure water; and, indeed, were it in a natural ſtate capable of producing ſpaſms on the extremities of the veſſels, would not great inconvenience, almoſt conſtantly, attend the circulation?

Of obſtruction in inflamed parts.

In regard to obſtruction in inflamed parts, I believe a few plain facts will make it pretty evident, that inflammation often happens without being accompanied with this circumſtance: that the cauſe producing inflammation, frequently brings on obſtruction, by inviting a flux of hu-

* See Haller on Irritability, ſect. 2.

mours

mours to, and overloading, the veſſels of the affected part; and that obſtruction, in many inſtances, is the remote cauſe of this diſeaſe. In a ſimple inflammation of the ſkin, or in an eryſipelas (the conſequence of abſorbed matter), eſpecially upon the legs, when the ſkin is not much thickened or dilated; in the beginning of common abſceſſes, and in many other inſtances, upon preſſing the part with a finger, we perceive, from the motion of the blood, and from the neighbouring veins being fuller than ordinary, that the circulation is carried on without impediment: but where the irritating cauſe is very active, does not the ſubſequent ſwelling ſometimes intercept the paſſage of the blood ſo much, as to bring on local dropſy, and even ſpongineſs in the ſkin? And have not we frequent inſtances, when the circulation is abſolutely ſtopped by inflammation, that a local mortification is the conſequence? It cannot, therefore, be unreaſonable

reaſonable to ſuppoſe, that the degree of obſtruction is in proportion to the flux brought upon the part, though the inflammation had not obſtruction for its firſt cauſe; and that obſtruction is frequently the remote cauſe, will preſently appear.

Inflammation does not ariſe from ſpaſm.

But, notwithſtanding the opinion was firſt ſuggeſted by Hoffman, we cannot conceive inflammation to ariſe from a ſpaſm of the extreme arteries, ſupporting an increaſed action in the courſe of them; becauſe it originated in, and is only ſupported by, conjecture, and for the following reaſons:

Reaſons.

Firſt. Becauſe, inflammation happens to parts which ſeem never to be affected with ſpaſms.

Secondly. Becauſe, the extreme arteries are not ſubject to ſpaſm, nor are they the ſeat of inflammation.

Thirdly. Becauſe, ſpaſms never produce inflammation.

Fourthly.

Fourthly. Becauſe, the capillary veſſels, in which the inflammation is ſaid to be ſeated, appear to be deſtitute of action, and conſequently not likely to be affected with ſpaſm.

I. The ſkin is ſubject to inflammation; and yet, when irritated, nothing like a ſpaſm appears *, either in the fibres of the ſkin itſelf, or in the veſſels which belong to it: nor do we think any part of the body ſuſceptible of ſpaſms but muſcular fibres, from which every part of the ſkin differs.

II. I do not remember one real fact being produced, capable of giving ſupport to the opinion, that ſpaſms of the extreme arteries ever take place. On the contrary, according to Haller's experiments, the arteries carrying red blood, are neither ſenſible nor irritable †; and daily experience evinces the truth of this obſervation,

* See Haller on Irritability, ſect. 2.

† On Irritability, p. 27, and 41.

for neither any thing like ſpaſm or pain is produced, when we incloſe the arteries alone in a ligature; whereas when muſcular fibres happen to be included, ſpaſms are an immediate conſequence.

It is ſaid, indeed, that the arteries are all encircled with a muſcular coat, which is of courſe irritable; that their ſyſtole is owing to this coat being ſtimulated by the blood paſſing from the ventricles of the heart; and the doctrine of nervous ſtricture, upon the extreme branches of the arteries, has in conſequence ariſen. But, notwithſtanding much ingenious theory, and wrong concluſions drawn from anatomical experiments, have been employed to ſupport this opinion, yet whoever examines into this matter by experiment, will, I think, be convinced, that the inward coat of an artery is a membrane *ſui generis*, calculated by its ſmoothneſs to give facility to the paſſage of the blood; and

that nothing muſcular appears in any of its coats.

No part of an artery muſcular.

A principal mark of a fibre being muſcular is its power of contraction, upon irritation; and as none of the coats of an artery can be affected by irritation, it is to me very clear, that no part of them is muſcular; or if they contract, from being irritated, why are they not made a hollow muſcle like the heart? Beſide, if we view the different coats of an artery with a good glaſs, they have not the appearance of any thing muſcular. They are elaſtic, and have all the properties of elaſtic ligaments. Like elaſtic ligaments, they are incapable of being put into motion by a ſtimulus acting immediately upon them; and *all* their coats, in the ſame manner as elaſtic ligaments, preſerve their elaſticity after death, and undergo no alteration by boiling gently, or by macerating in ſpirit of wine *.

Compared with elaſtic ligaments.

* See Compend. Anat. à Fran. Nicholls, p. 26. lect. 2.

Though they may poſſibly have ſomething in their ſtructure peculiar to themſelves, yet there is no other part of the body to which they bear any analogy. It ſeems owing to contraction taking place by elaſticity, that the arteries are cloſed when divided, or when the blood ceaſes to flow through them; for their circular fibres contracting upon the innermoſt membranous coat, make it fill up, and entirely ſtop the paſſage through the veſſel, which is very different from ſpaſm, nor does nervous influence ſeem to interfere.

In truth, writers ſeem to have perplexed this part of phyſiology much, by labouring to prove, that irritability is eſſential to the arteries in promoting their contraction. But we muſt call to mind, that the muſcular fibres, which are actuated to their office by a ſtimulus, are in general incapable of being *lengthened* ſuddenly *by diſtention*; and that, being irritated, they

ſhorten

ſhorten themſelves, and ſpontaneouſly return again to their natural ſtate, when the irritating cauſe ceaſes to act. On the contrary, the fibres compoſing elaſtic ligaments, or the arteries which reſemble them, do not perform any part of their office by being made ſhorter than their uſual length; but are put into action from being *lengthened by diſtention*, and afterward return with the force, uſual to elaſtic ſubſtances, to their former dimenſions. So that there are no parts of the body which differ more in their action, than the arteries and the muſcular fibres *. Nor is the cauſe of the ſyſtole of the arteries, and the cauſe of the contraction of the muſcular fibres, any way ſimilar.

* Perhaps the ſphincter muſcles may be oppoſed to this doctrine; but it ought to be obſerved, that they differ very much from muſcular fibres in general, and ſeemingly are of a peculiar ſtructure: they bear, indeed, ſome analogy to the elaſtic ligaments, but are deſtitute of moſt of the properties belonging to them.

There is not any writer, I am acquainted with, who ever ſuppoſes a ſtimulus to interfere in reſtoring the muſcular fibres from contraction to their natural ſtate. The ligament in the neck of brutes, like the elaſtic vegetable, returns to its uſual length, when the diſtending cauſe ceaſes to act, without being excited to this office by any ſtimulus. Are not the coats of the arteries of the ſame nature? They give way to the blood when expelled from the heart, and afterward aſſiſt in preſſing it forward, by a natural power of returning to their former ſhape; and for this office, irritability in them is not neceſſary. Nor does the redneſs, occaſioned by irritating topics, form any analogy in favour of the large arteries being irritable; becauſe the lymphatics are very different kind of veſſels: their nerves are more expoſed, and more liable to be affected by an irritating cauſe, and yet, even in this inſtance,

inſtance, nervous ſtricture, or any motion in them, is not the conſequence.

If then the arteries, carrying blood, are void of muſcular fibres, they cannot be irritated ſo as to be affected with ſpaſms; or even if they produced ſpaſms, upon being affected with the cauſes commonly bringing on ſpaſms in the muſcular fibres, an immediate diſcharge would not be the effect of irritating ſubſtances applied to the ſkin. Upon irritating lymphatics, they even admit, and are loaded with, red blood; whereas did a ſpaſm take place, it would be prevented from entering into them, and they would become pale and diminiſhed in ſize. But the motion of the blood through the inflamed part, when not prevented by obſtruction, puts it beyond doubt, that ſpaſm does not any way aſſiſt in bringing on this diſeaſe; and whoever attends to what was before ſaid, we apprehend will be ſatisfied in this matter. Indeed, I firmly believe, the lym-

And cannot be affected ſo as to produce ſpaſms.

phatics have not any power of cloſing themſelves; becauſe in wounds, unleſs their ſides are preſſed together by the ſubſequent ſwelling, they continue to diſcharge lymph from the very beginning to the end of the cure: for the reddiſh liquor which appears, two or three hours after the wound is made, does not come from arteries not cloſe contracted, as has generally been ſuppoſed, but from lymphatic veſſels; and acquires its redneſs by diſſolving and waſhing away the blood which remains in, or drains into, the wound after the dreſſings are applied.

Spaſms may not ſo frequently occur as has been imagined.

Perhaps many diſeaſes, which, becauſe they are immediately relieved by nervous medicines, are ſuppoſed to ariſe from a ſpaſm of the ſmall veſſels, may be thought to invalidate theſe obſervations; but till it is proved, that the arteries are affected with ſpaſms, this mode of reaſoning will hold good: nor is it ſufficiently clear, that ſpaſms are ſo frequent in nervous diſeaſes

as

as is imagined. For inſtance, the immediate relief often given in a fit of the nervous aſthma, by gum ammoniacum, aſafœtida, and ſuch kind of medicines, may occaſion an opinion that the diſeaſe takes its riſe from ſpaſm; but this amounts to nothing more than conjecture: and, if we except the aſthma ariſing from a ſpaſm of the diaphragm, we ſhall account for the nature of the complaint, and the effects of theſe medicines, with equal ſatisfaction, if we ſuppoſe the nerves, in conſequence of diſeaſes, are incapable of doing their office, and that the parts they ſerve are of courſe in the ſame predicament. For a difficulty of breathing may ariſe from theſe cauſes, and eaſe be the immediate conſequence of thoſe remedies which increaſe nervous energy. If by ſpaſm, a contraction only, without any alternate motion of the ſmall veſſels, is meant, it ſtill is not any thing in favour of its being the proximate cauſe of inflammation, by cauſing an increaſed *impe-*

tus

tus of the blood in the veſſels of the affected part; becauſe, if the veſſels are in a ſtate of contraction, their action muſt ceaſe inſtead of being increaſed. Beſide, if there were to be a ſpaſm of the extreme veſſels, it would confine the blood to the larger arteries; and in what manner could the veſſels act upon, or quicken the motion of, the fluids, when there are none in the part?

Spaſm and inflammation different diſeaſes.

Indeed it appears to me, that ſpaſm and inflammation are oppoſite diſeaſes; for is not inflammation, or a tendency to inflammation, the cure of ſpaſm? Bliſters, ſinapiſms, eſſential oils, &c. ſeem to produce their good effects in ſpaſmodic diſeaſes by bringing on inflammation, or increaſing heat. Are not all the ſpaſtic affections, of which we are certain, relieved by thoſe remedies, whether inwardly or outwardly applied, which add warmth or vigour to the nerves? If heat is the abater of ſpaſm, muſt not fever always put an end to inflammation,

flammation, if brought on by ſpaſm? And yet it is a certain fact, that inflammation is increaſed by increaſed heat.

But it has been ſaid, that cold air, by conſtringing the extremities of the arteries, brings on inflammation; and why may not a ſtricture from ſpaſm produce the ſame effect? To this we anſwer, becauſe they are no way ſimilar; and that, ſo far as it can be made to prove any thing, it proves the direct contrary. For cold air, when it brings on inflammation, makes its way into the affected part, deſtroys or leſſens nervous energy, inſtead of conſtringing it; brings on a ſwelling, and the inflammation takes place only beyond the parts which are obſtructed, which are pale and lifeleſs: and would not they, inſtead of being inflamed, appear equally lifeleſs were the extreme veſſels rendered impervious to the blood by a ſtricture from ſpaſm? In parts, invaded with ſpaſms, perſpiration is not obſtructed,

obſtructed, no continued ſwelling appears, nor do they inflame; whereas when cold acts with force ſufficient to bring on inflammation, it obſtructs perſpiration, and occaſions an accumulation of heat in veſſels leſs injured, bordering upon the obſtruction. Antiſpaſmodics either mitigate or remove ſpaſms, but inflammation from cold does not give way to their uſe, unleſs we ſuppoſe neutral ſalts to be of this claſs. Hoffman, indeed, if I remember right, was of this opinion; and becauſe they were ſerviceable in fevers, which he *ſuppoſed* aroſe from ſpaſm, numbered them among the antiſpaſmodics; but this was only ſquaring practice to theory, and moſt likely aſcribing effects to theſe remedies which they never produce.

Laſtly, it may be aſked, if you do not allow of ſpaſm in the extreme arteries, in what manner do you account for the preternatural heat in the hot fit of an intermitting fever? To which we might fairly anſwer,

anſwer, intermitting fevers are another ſpecies of diſeaſe, as is evident from their not being accompanied with local inflammation. And whether we are able or not to account for this ſymptom, we may obſerve, that there is not yet any proof of ſpaſms being the cauſe of it; or that this diſeaſe, in any ſtage, is accompanied with ſpaſm or nervous conſtriction: for nervous conſtriction or ſpaſm, as we have before obſerved, requires nervous energy to occaſion contraction in the muſcular fibres; and it is manifeſt, from the rigor itſelf, that at the onſet of every fit in this fever, nervous energy is not only leſſened but almoſt deſtroyed for a time*, and that the nerves

Spaſm does not interfere in intermitting fevers.

* It has long been obſerved, that thoſe who die in intermitting fevers, die in the cold fit; owing, no doubt, to nervous affection: and where the habit is very irritable and debilitated, the very firſt impreſſion made in the beginning of other fevers is ſometimes ſo great, that the fate of the patient is certain; the violence of the rigor evidently ſhewing that the injury the nervous ſyſtem receives is irrecoverable,

have

have not power to act with force sufficient to effect any contraction. The cause of intermitting fevers clearly brings on preternatural irritability in the habit *; and the nerves being thus rendered susceptible of the least impression, are so affected for a time by the cause bringing on the rigor, as to have a tendency toward death: add to this, that being rendered in-

In these disorders there is an increased or preternatural irritability.

In what manner the fit is brought on.

* If we give a dose of laudanum about half an hour before the coming on of the fit, we frequently prevent it; and if we take a view of the remedies which cure intermitting fevers, we shall discover that they all have a power of lessening the irritability of the solids, and thus render the nerves incapable of being affected by the cause which excites the fit. If taking off increased irritability is the cure of intermitting fevers, increased irritability must always exist in this disorder. However, the cause of this irritability must first be removed, otherwise sedatives will prove insufficient; and on this account due attention must be paid to the state of the abdomen. We have already hinted, that all agues arise from an increased irritability of the abdominal viscera, which extends itself to the whole body; and are not the swelling of the spleen, hardness of the belly, the use of vomits, and the principal part of the cure depending often upon relieving an obstructed viscera, demonstrative proofs of the truth of this doctrine?

capable

capable of doing their office, neither blood nor heat is carried to the ſurface of the body, which of courſe becomes cold, pale, and ſhrinks inward. But as the cauſe producing this effect goes off, the nerves gradually begin to exert themſelves again, and the blood, &c. return to their uſual channels; whence the ſucceeding heat being confined, produces a temporary fever, which diſappears upon the nerves having regained their uſual power: for the extreme arteries being enabled to admit the fluids, perſpiration comes on, and the uſual temperature of the body is reſtored.

The power of the ſun and moon in this diſorder.

Dr. James Lind, in his Treatiſe on the Fen-fever, reckons the power of the ſun and moon amongſt the exciting cauſes of this diſorder. He ſays, "The power "which they have at Bengal to make "thoſe relapſe who have had it, is truly "amazing; and there are ſo many in-"ſtances of this, and it is ſo well known

"at

" at Bengal, that it is enough to have " mentioned it." His own practice has furniſhed him with ſeveral ſtrong inſtances, which he relates in ſupport of this opinion; and he ſays many more might be collected in every country betwixt the tropics. If writers are not miſtaken, there are many inſtances upon record of the influence of the ſun and moon in bringing on, at leaſt, many of the ſymptoms of diſeaſes in this iſland *; and if the moon has that effect aſcribed to it, in raiſing the tides, it is not unreaſonable to ſuppoſe, that it may have ſome effect upon the human body, when rendered more ſuſceptible of feeling by a particular ſtate of the nerves. Eſpecially if what ſome have aſſerted be true, that tides are not confined to the waters, but that there is alſo a tide in the air; for a particular kind of air, under the ſtate of nerves deſcribed, will often bring on this diſorder.

* Dr. Mead on the Influence of the Sun and Moon.

I have known a ſudden expoſure to the blaſt of a north-eaſt wind, inſtantly bring on a rigor; and a ſingle fit of an intermitting fever in a perſon lately cured of this diſeaſe, in whom the increaſed irritability of the nerves was not entirely removed; as his being ſuſceptible of the leaſt alteration in the air, ſufficiently evinced. Under the ſame predicament, I have alſo been witneſs to a cold ſtream of air from a river renewing the ague. The patient's deſcription was, that walking in a meadow he felt a damp cold air come upon him, from an adjoining river: a chilneſs firſt, then a rigor, and afterward a hot fit, &c. enſued; nor did the diſeaſe terminate in one fit, but he was again forced to take the bark to accompliſh a cure. So very irritable are people often in agues *, that it is not uncommon for them to be affected much with high winds, though they are even in a warm bed. The reaſon of a

Proof of external agents bringing on a rigor in intermitting fevers.

* See Diſſertation on Irritability in general.

rigor when a depoſit of matter happens, ſeems to be the great degree of irritability people at that time poſſeſs*; and, I am certain, an increaſed irritability accompanying inflamed ulcers, ſubjects the patient to evening rigors. Precipitate was applied to an ulcer, an inflammation enſued, and the patient had for ſeveral days, while the inflammation remained, a rigor at a certain time: I have ſeen inflammation bring on a regular intermittent, which was removed by curing the local complaint. Felix Whurts †, and many other writers, have long ſince ſpoken of the effects of the moon upon ſores; and if the ſtate of the air above mentioned, under particular ſtates of irritability, could bring on a rigor, &c. by affecting the nerves; why not air-tides, actuated by the moon, at certain periods, produce a ſimilar effect? Indeed, there ſeems to me, not to be any doubt but *ex-*

Proofs ſhewing that an increaſed irritability ſubjects the patient to rigor, &c.

* See Pulſe Table. † Chap. xv.

ternal

ternal agents, capable of leſſening nervous energy, do bring on the rigor in fevers, and its conſequences, when the body is in a ſtate to be affected by them. The ſubject has not yet been ſufficiently attended to in this part of the world, to determine about the point in queſtion; and the labour and exactneſs required, may deter many from the undertaking; eſpecially as knowing how to remove the increaſed irritability is ſufficient for the phyſician's purpoſe. But if time and ſtrict obſervation ſhould ever confirm what has been ſaid about the effects of the moon upon the human body, under her different motions, it may explain many things, in the nature of diſeaſes, not at preſent underſtood.

Spaſmodic diſeaſes are not attended with inflammation.

III. Beſide, even if the extreme arteries were liable to be affected with ſpaſm, we have no reaſon, from experience, to conclude, that ſpaſm will bring on inflammation; becauſe we conſtantly ſee violent

ſpaſmodic diſorders exiſt for a great length of time without one ſymptom of inflammation. This is exceeding common in pains of the ſide, in after-pains, and in ſpaſmodic diſeaſes of the viſcera, &c. In the *tetanus* is not every muſcular fibre in the body in a ſpaſtic ſtate, and yet without inflammation? I have ſeen a young woman afflicted, two years together, with the *hieranoſus*, that rendered her inſenſible, and kept the muſcular fibres of the whole body conſtantly, more or leſs, in a ſtate of contraction, without ever having, as I could diſcover, any quickneſs in her pulſe, or any ſigns of inflammation. Nor do I remember ever ſeeing a caſe truly ſpaſmodic which brought on that diſeaſe. Certainly, if ſpaſms had any diſpoſition to produce inflammation, it would be no uncommon attendant in the caſes we have mentioned: and in whatever view we examine them, they ſeem foreign to our preſent ſubject, and lead to the uſe

of

of antiſpaſmodics, where different kind of remedies are more proper.

IV. Haller ſays*, "Upon examining "the circulation in animals, with the mi- "croſcope, I have never obſerved any "contraction in the arteries. I have viewed "the circulation for whole hours in fiſhes "and frogs, and, during the whole time, "the ſides of the veſſel remained as quiet "as thoſe of the tube with which I examin- "ed them." All the experiments I have made of this kind, reſpecting the capillary veſſels, perfectly agree with the obſervations of this celebrated writer; and when I ſee a globule of blood ſqueezed into an oblong form, in paſſing through a particular part of a ſmall veſſel, it ſeems perfectly clear that its ſides do not move or give way. From all which reflections and experiments, from the conſtruction of the arteries being different from that of the heart, and from irritability in them being

* On Irritability, ſect. 2.

uſeleſs; we are led to conclude that their *inſide* is not irritable. We of courſe believe that all the theories which have ſuppoſed ſpaſms to ariſe from their being irritated by the circulating blood, are fallacious; and that inflammation never originates in the blood-veſſels while the blood remains in its natural ſtate, unleſs from local injury: but let us ſee what farther inſtructions we can receive from nature.

The author's doctrine of inflammation.

I cannot think, with ſome modern writers, that the heat of the human body conſiſts in the repeated action of the ſolids and fluids. I join thoſe in opinion who think fire is elementary, and that it reſides in all animal bodies *ab origine*; becauſe wherever there is heat, I apprehend there is fire in action, and I am led to believe, that inflammation in every inſtance is wholly owing to *an accumulation of animal fire.*

The

The exiſtence of *animal heat* cannot be denied; and it ſeems to be equally true, that that kind of irritation which conſtantly frets the nerves, invites into the affected part a greater degree of this heat than common. It is univerſally admitted, that irritating matter occaſions an unuſual flow of red blood and lymph into the ſmall veſſels of the part upon which it acts; becauſe it is perceivable with the eye. And though we cannot ſee the arrival of an unuſual quantity of heat, yet it is not leſs evident to the ſenſe of feeling.

If we attend to the progreſs of inoculation, we ſhall diſcover, by applying a finger to the ſmall puncture, where the variolous matter was inſerted, a preternatural heat, and ſenſation of fire ſufficient to prove that the infection has taken place, as ſoon as there is any appearance of morbid affection in the wound. Afterward, when a redneſs begins to ſhew itſelf, the pulſe being perfectly calm, and the patient

as cool and temperate as poſſible, the heat is greater about the ſmall ulcer, than can poſſibly ariſe from any motion in the adjacent veſſels. Compare the appearance of blood in the lymphatic veſſels round this ulcer, with the blood paſſing through the lymphatic veſſels in the *tunica conjunctiva* of blear-eyed people; and though the latter, for the moſt part, is a hundred times greater, yet there is no increaſed heat, becauſe there is neither obſtruction nor irritation. And when we reflect upon what has already been ſhewn, that an increaſed velocity of the blood does not bring on inflammation; it will clearly appear that the preternatural heat in this inſtance, depends upon irritation alone, independent of any motion in the blood.

Irritation, its effects.

Irritation then, in this inſtance, produces three diſtinct effects; the inviting heat, blood, and lymph to the diſordered part: the accumulated blood and lymph producing diſtenſion, obſtruction, redneſs, and pain;

pain; and the accumulated heat, inflammation. But though we imagine this heat is brought by the nerves, blood, and all kinds of veſſels and fibres, becauſe they all are the reſidence of animal heat, yet, in ſome inſtances, the quantity of heat brought in the blood is only a ſmall ſhare, compared with that brought by the other parts; becauſe in caſes of great obſtruction, a ſmall quantity of blood only paſſes through the inflamed part; for, meeting with reſiſtance, it eſcapes by the anaſtomozing arteries. But we will view this diſeaſe in a different light.

Inſtance of obſtruction being the cauſe of inflammation.

Suppoſe a perſon in perfect health, whoſe juices are free from acrimony, has a bandage made ſtrait round his leg, without entirely intercepting the paſſage of the blood through the arteries; would not the parts both above and below the ligature, after ſome hours, firſt ſwell, then gradually become hotter, afterward red and painful? And if the ſtagnating fluids con-

continue in the ſame ſtate a conſiderable time, will they not either bring on ſuppuration or a mortification, according to the degree of obſtruction and acrimony they have acquired?

Now obſtruction is evidently the firſt and remote cauſe of inflammation in this inſtance, becauſe it diſappears upon the ligature being timely removed; and wherever there is obſtruction, there cannot poſſibly be a briſk circulation through the part. Is not the paſſage of the blood every way intercepted by the bandage, and muſt not the veſſels have much leſs action than when they are free from obſtruction? I am certain I have ſeen great inflammation and ſuppuration brought on, all over the leg, in a ſimple fracture, where it was impoſſible for the blood to move with celerity, in conſequence of a very tight bandage made by an ignorant bone-ſetter. In ſprains, and violent contuſions, the veſſels are rendered incapable

of

of carrying on the circulation regularly; and obſtruction and inflammation follow: and can there be a briſker circulation, or an increaſed impetus of the blood in veſſels incapable of acting upon their contents? On the contrary, does not every ſucceſsful attempt in reſtoring the veſſels to their proper action, and promoting a briſker circulation through them, aſſiſt nature in accompliſhing a cure?

By what means it may bring about this effect.

If then neither a briſker circulation, nor an increaſed impetus of the blood in the veſſels of the part, pain, ſpaſm, or the blood itſelf, while it continues in its natural ſtate, are capable of producing inflammation, the queſtion is, in what manner does it ariſe in theſe inſtances? To which we may anſwer, perhaps from irritation happening in conſequence of acute obſtruction; from accumulated heat, or from confined juices acquiring acrimony: becauſe there are ſeemingly no other cauſes than theſe to produce it. That con-

confined juices do acquire acrimony, is plain from the ſuppuration which ſometimes follows; yet it may be doubted, whether they degenerate from health much, when excluded from the air in the ſhort ſpace of time in which the inflammation begins to appear: and if in the firſt ſtage they are incapable of irritating, either obſtruction or accumulated heat, or both, muſt bring on the ſubſequent ſymptoms, though the acrimony of the fluids may afterward aſſiſt in increaſing and ſupporting the diſeaſe.

Now one effect of obſtruction is nervous diſtenſion; and we have ſeen from a plain fact, that mere nervous diſtenſion does not bring on inflammation. But where ſwelling is ſudden, the nerves being put into a more irritable ſtate than uſual, they may be irritated by the impulſe of the circulating blood againſt the obſtructed part; or by the cauſes bringing on the obſtruction, as fractured bones, &c. and what

what ſhare accumulated heat itſelf has in this buſineſs, may be gathered from the following reflections.

Experiments have abundantly ſhewn, that the blood and juices poſſeſs a quantity of phlogiſton, which they are ſeemingly every moment ſupplied with from the lungs *. It is very evident from the heat of the breath, and from the heat of the perſpirable matter, eſpecially in animals undergoing violent exerciſe, that heat or fire, in a greater or leſs quantity, is conſtantly diſcharged from the lungs, and from the veſſels of the ſkin; and hence it has been thought reaſonable to conclude, as phlogiſton † does not produce heat without being put into action, that it is converted into heat or fire by the heat conſtantly exiſting in the body. Mr. Leſlie ſays, animal heat is owing to

* See Dr. Prieſtley's Exper. Phil. Tranſ. part firſt, for 1776. † By the word phlogiſton, we mean the inflammable part of any body, or the food of fire.

the

the evolution of phlogiſton. From experiment, Mr. Henly ſuppoſes, that phlogiſton violently agitated is called fire*; and Mr. Crawford thinks that the abſolute heat ſeparated from the air in reſpiration and abſorbed by the blood, is the true cauſe of animal heat. But may not the electric fluid, which reſides in animals, be the living principle of fire, and have a principal ſhare in keeping up or creating animal heat? Common electrical experiments, ſuch as lighting a candle, ſetting ſpirit of wine and hurds on fire, diſcharging the electrical piſtol loaded with fixed air, and the effects of lightning; evince, that being properly united with phlogiſton, by being obſtructed in its paſſage; it produces actual fire, or puts the fire reſiding in phlogiſton into action: and why may it not, meeting with phlogiſton in the body, conſtantly renew the heat animals poſſeſs? But by whatever means heat is

A new opinion concerning animal heat.

* Cavallo's Complete Treatiſe of Electricity, p. 119.

generated

generated in the body, it ſeems in health to be expelled before it becomes unfit for the purpoſes of life; and that, though the air inſpired may aſſiſt in cooling the blood, yet it is kept from over-heating, in a great meaſure, by the evacuations mentioned: and may not heat, therefore, from being confined and accumulated in any particular part, as it is contrary to the laws of nature, become ſo fiery and active as to irritate and inflame?

How the body is kept from over-heating, *& vice verſa.*

We have ſeen inflammation does not accompany or ſucceed even an increaſed heat, where heat is conſtantly diſcharged by a free perſpiration; but when perſpiration is obſtructed, either local or general inflammation is a common conſequence. Even in the inſtances mentioned at page 281, if the part is kept in a ſtate of perſpiration by proper applications, inflammation is prevented; and why this difference, but from the fire or heat which ought to have been diſcharged, being con-

ſined *? Nor does it ſeem material whether the egreſs of fire or heat is prevented by cold, by ſwelling, and diſtenſion from injuries, or any other cauſe; the effect being the ſame. Does not this doctrine agree with obſervation? For after acute obſtruction, from diſtenſion and tumor, has taken place, an increaſe of heat ſhortly appears; and we may perceive, with as much certainty as in water heating for culinary purpoſes, that it gradually becomes greater till it has the ſenſation of fire.

Inflammation in wounds.

The ſame may be ſaid of wounds; for the effect of the wounding inſtruments is ſpaſm or pain, neither of which, we have ſeen, produce inflammation. Irritation occaſioned by the air, by the dreſſings, or by the impulſe of the blood againſt the

* Perhaps it may be imagined that the applications, by preventing tenſion, may alſo prevent inflammation; but even if a cataplaſm is applied, the inflammation will not entirely ſubſide: whereas, if perſpiration is plentiful it will diſappear.

obſtructed

obſtructed veſſels, may in part be the cauſe of it. Nevertheleſs, accumulated heat ſeems alſo to aſſiſt in bringing it on; becauſe it diſappears, as heat can get at liberty, by the veſſels becoming pervious. Wounds cured by the firſt intention, are attended with leſs inflammation than others, ſeemingly from a ſpeedy inoſculation taking place, and preventing any kind of obſtruction.

Hitherto we have conſidered obſtruction ariſing from the circulation being intercepted by external cauſes; it now remains to enquire, whether the fluids themſelves ever lay the foundation of inflammation, by cauſing obſtruction, from becoming too thick to paſs the extreme veſſels. In this matter we agree with a late writer *, that there are no experiments directly in proof of a preternatural lentor prevailing in the maſs of blood, while circulating through the larger veſ-

Lentor in what caſes it may prevail in the ſmall veſſels.

* Dr. Cullen.

fels. But, on the other hand, we think it not improbable, that a variety of external cauſes, may thicken the juices in their ſlow paſſage through the lymphatics, on the ſurface of the body, and thus bring on obſtruction and inflammation. Yet, though we think this circumſtance may ſometimes happen, we would not be underſtood to ſuppoſe that theſe events always ſucceed one another. On the contrary, we know it does not; for *chronic* obſtruction will often remain a great length of time without the appearance of this ſymptom. Indurated glands and ſcirrhi are often long without inflammation. In moſt of thoſe caſes where pain, unaccompanied with inflammation, is occaſioned by diſtenſion, there muſt of courſe be obſtruction. Very large abſceſſes are often formed about the hips, &c. in what are called ſcrophulous habits, without the leaſt inflammation, and without the knowledge of the patient; till thin matter in abundance

Inflammation does not always follow obſtruction.

occaſions a ſwelling, which muſt ſeemingly be owing to the abſence of ſtimulus: becauſe when, by length of time, the ſtagnating juices become acrid, irritation and inflammation are the immediate conſequences.

Now this abſence of ſtimulus and inflammation may be owing to the manner in which obſtruction takes place, or to the nature of the part obſtructed. In all thoſe caſes of obſtruction referred to, productive of inflammation, it is evident irritability is increaſed, and the circulation ſo interrupted, that there is not any regular, or ſcarcely any ſort of paſſage through it. The obſtructions we are now ſpeaking of, are always progreſſive; and the parts dilating gradually, irritation does not enſue; and the blood-veſſels and nerves doing their office, even through the obſtruction, no inconvenience ariſes from confinement of heat, &c. ſo that if the obſtruction happens in a part of little ſenſibility, a ſtimulus can

give little or no diſturbance. In confirmation of this doctrine, it is well known that *acute* or ſudden obſtruction, when ſeated in ſenſible parts, is often followed with inflammation; and that when it is *chronic* or gradual in its progreſs, inflammation does not haſtily appear.

Inflammation, what it is.

Upon the whole, does it not ſeem evident, that every external inflammation is accumulated heat, either ariſing from external irritation, or from the confinement of heat or fire? And is not there every reaſon to believe, that internal inflammation is produced in the ſame manner? A metaſtaſis of matter to any external part of the body, we are certain brings on inflammation, and its ſymptoms, by irritating; and does not the ſame cauſe produce pleuriſies, inflammations of the viſcera, &c.? Sometimes external affections of this kind are preceded by a rigor; at other times no rigor appears: and does not the ſame variety happen in internal

Internal inflammation.

inflammation? When acrid *miaſmata* ſeize the internal parts, do they not bring on inflammation by irritating? Witneſs epidemical ſore-throats, inflammation of the lungs, in the meaſles, &c. And is it not almoſt certain that putrid *miaſmata* always bring on contagious fevers, by ſeizing upon, and irritating the nerves of the *primæ viæ?* If the pores on the external parts of the body are ſo cloſe as to prevent inſenſible perſpiration, the fire or heat which ought to have been diſcharged, by being confined, may occaſion either general or local inflammation, in the manner already deſcribed; or if we ſuppoſe the inflammation to ariſe from the immediate action of cold upon internal parts; yet we ſee it occaſions an accumulation of heat: and, we believe, all kinds of inflammation, whether external or internal, to be produced by one or other of theſe cauſes.

Irritation, in what manner it brings

It has not, however, yet appeared by what means a continual fretting of the

on a flux
the
part.

nerves brings to the affected part an unuſual flow of heat, blood, and lymph: for though ſome have ſaid, that inſtinct directs the heart to ſend immediately, to the irritated part, a quantity of fluid proportionable to the irritation; and others have endeavoured to prove, that irritation brings on a flux by cauſing an alternate contraction in the ſmall veſſels; yet both theſe opinions want evidence to ſupport them: the one, as it at preſent ſtands, being perfectly chimerical; and the other, I imagine, has never been ſeen. Even Dr. Whytt * ſays, they are not remarkable enough to be diſcerned in moſt animals, yet they may be ſeen in the legs of a bug: and not being able to account for the circulation of the fluids through the capillary veſſels, without motion in them, he reſts upon this proof; and thinks it highly probable, that they are continually agitated

* Phyſ. Eſſ. p. 55. As Mr. Baker, from whom the account of the bug is taken, ſays, he never ſaw a vibration of the veſſels in any other creature, we imagine he was miſtaken in this inſtance.

with

with very ſmall alternate contractions, to which the circulation in a great meaſure is owing. On the contrary, we have already ſhewn by a microſcopical inquiry, that there is no motion in theſe veſſels; and depending more on the eye-ſight than conjectural reaſoning, I have looked out for ſome other cauſe than Dr. Whytt aſſigns, to account for the paſſage of the fluids through capillary arteries. We think it can ſcarcely be doubted, that a quantity of the electric fluid is conſtantly paſſing through all parts of the body*; and whoever has ſeen in what manner it accelerates the motion of fluids through capillary glaſs tubes which are incapable of motion, will readily ſuppoſe that it may be the cauſe of the motion of fluids in the capillary tubes of animals which do not move †. They will be more inclined to

* We ſuppoſe the reader to be acquainted with the facts that may be produced in favour of this opinion.

† The abſorbent ſyſtem muſt be excepted, when it acts by its own power.

this opinion, when they reflect that it increaſes local perſpiration, and that while an inſulated perſon is bleeding from a vein opened in his arm, the ſtream is made more rapid by conducting into the body a greater quantity of the electric fluid than it generally poſſeſſes. Upon this principle we may account for a greater flow of humours through the lymphatic veſſels to any particular part by irritating; for by this means a greater quantity of the electric fluid may be invited into it, and a torrent of humours, in proportion to the irritation, will be the conſequence. However, it muſt be confeſſed, that all we know of the matter *with certainty* is, that irritation increaſes ſecretion; that the lateral lymphatics are ſecretory tubes; and that the increaſed flux is owing to a greater ſecretion than ordinary: and till we know more, this may be ſufficient for our purpoſe in practice; becauſe we are certain of the fact, and that removing the irri-

Irritation increaſes ſecretion.

irritating cauſe puts an end to the complaint. Let us, therefore, ſee whether we cannot explain the nature of the ſymptomatic fever attending this diſeaſe.

Symptomatic fever.

It is a truth well known, that when any part is inflamed it becomes more ſenſible, and of courſe more irritable; and even parts which had ſcarcely any feeling before, become very ſenſible upon being thus diſeaſed: which muſt be owing to an increaſed ſenſibility in the nerves, brought on by irritation, and its conſequences diſtenſion; becauſe no other part of the body is capable of ſenſation. Nor is this increaſed ſenſibility confined to the inflamed part, but extended by the nerves through the whole body: for the brain being diffuſed in one connected ſubſtance over every fibre included in the cuticle, impreſſions made upon one part are immediately communicated to the whole of this nervous expanſion *. If we drink a glaſs of

* See Diſſ. on the Brain and Nerves.

brandy,

brandy, there is an immediate heat communicated to the whole body before there is any poſſibility of the ſpirit entering the blood; and which muſt therefore be owing to the heat of the brandy upon the extremities of the nerves in the *primæ viæ*: and if heat will be communicated from their extremities in one inſtance, why not in another? Accordingly preternatural heat brought on by irritation, as well as increaſed irritability, becomes general; wherefore the *diatheſis phlogiſtica* is ſeated in the nerves inſtead of the arteries, and the whole nervous ſyſtem being thus inflamed, is more forcibly irritated. In particular, the brain diffuſed over the fibres in the heart is ſtimulated by the circulating blood in proportion to its degree of irritability: thence a quicker pulſe, from a more frequent contraction of the heart and arteries; and both theſe ſymptoms, which characterize the ſymptomatic fever, keep pace with the degree in which irritation produces its effects.

How-

However, the motion of the heart may, in ſome inſtances, poſſibly be quickened without its becoming more irritable; and we beg leave to offer the following reflections to thoſe who will take proper pains to examine them. Haller* ſays, "the "beſt method of renewing the motion of "the heart is to irritate its internal ſur- "face; and I have frequently ſucceeded by "blowing into it, after having tried cor- "roſives without ſucceſs. The motion "of the heart is equally renewed whether "you inject water or blow air into it. If "the air gets any how into the left ven- "tricle, it is ſufficient." Now Sir Iſaac Newton, Dr. Mead †, and others, were of opinion that a ſubtle active ſubſtance, called univerſal elaſtic matter, was diffuſed throughout the univerſe; and, readily pervading all bodies, produces, many of their actions upon one another: and does not the electric *aura*, paſſing off the point of a

The motion of the heart may be increaſed without its nerves becoming more irritable. Reflections.

* On Irrit. ſect. 2. † Introd. to Eſſ. on Poiſons.

metal

metal or wooden conductor, ſeem to to be the fluid theſe able philoſophers ſought after, though it may be ſomewhat different in its properties from what they imagined? Probably thoſe may be right in opinion who think it the vivifying principle of nature. A man with a putrid fever, in the agonies of death, was talking to me, when the cornea of both his eyes loſt their luſtre and he was inſtantaneouſly dead. The living principle ſeemed to leave him in the twinkling of an eye; nor can I compare its extinction to any thing but the dropping of an erect feather, by diſcharging the electrical conductor upon which it is placed. Indeed, there can ſcarcely be any doubt that it pervades the human body. Whoever has ſeen it paſs in fluids, will eaſily conceive that it makes part of what is called blood, which is an excellent conductor; and that it may have a principal ſhare in the circulation: for electricity communicated ſtrongly to in-

ſulated

ſulated animal bodies, quickens the pulſe. It is neceſſary the blood itſelf, in its natural ſtate, ſhould be incapable of irritating; and its ſtriking againſt the nerves of the heart is fully ſufficient to carry on the circulation: but would this ſtriking againſt the heart continue an inſtant of time if unſupported by a prior cauſe; and may not the very ſubtil fluid we are ſpeaking of, capable of exciting motion without pain or inconvenience, be the firſt agent of motion in the blood? Nor are theſe reflections entirely unſupported by the ſuggeſtions of ſome great men *, who thought the fluid ſecreted in the brain did the offices aſcribed here to the electric fluid; and the only difference is, that the nervous fluid is conſidered as a conductor inſtead of being an agent itſelf.

Surprize, as, for inſtance, when a phyſician enters a patient's chamber, is apt to quicken the pulſe; but no ſooner does he

* Dr. Mead and others.

recover

recover himſelf, than it returns to its accuſtomed ſtate; and the queſtion is, whether this is owing to a momentary increaſe of irritability in the nerves, or to the cauſe juſt aſſigned. Indeed, it is almoſt impoſſible to conceive, that irritability in any ſolid ſubſtance can be ſo quickly increaſed and diminiſhed; but it is eaſy to imagine that ſurprize may ſometimes at firſt excite a greater exertion of the nerves, and, putting this fluid into quicker motion, accelerate the pulſe only while it laſts: from all which we may conclude, that, if there is any truth in the conjectures that have been advanced, an accelerated pulſe may ariſe from two cauſes; an increaſed inflammatory irritability, and a greater flow of the electrical *aura* to the heart. For though in inflammatory irritability both theſe cauſes probably concur, yet the latter may alone occaſion it for a time: but to proceed.

We

We have ſhewn in the Diſſertation on Irritability in general, that the nerves of ſome people are ſo extremely ſenſible in a natural ſtate, as to produce violent inflammation, and acute fever from ſlight cauſes. Whereas in others, where the offending cauſe is violent, the ſucceeding inflammation will only be ſlight; probably becauſe the nerves are almoſt inſenſible to irritation. But whether the inflammation becomes conſiderable from the natural irritability of the patient, or from the force of the ſtimulus, or both united; an increaſed impulſe of the blood in the large veſſels is a natural conſequence. And though we believe that the *diatheſis phlogiſtica* originates in the nerves; yet we imagine the blood itſelf contributes to, and aſſiſts in, ſupporting the fever, by conſtantly receiving preternatural heat from the nerves and muſcular fibres, and diſperſing it through the whole body. But without this ſupply of heat from the nerves, &c.

the

the blood ſeems to be incapable of creating diſturbance; becauſe there is an end of every ſymptom of preternatural heat ſo ſoon as the cauſe productive of accumulated heat is removed: whether this is effected by leſſening irritability, by taking away any irritating ſubſtances externally applied (where they have not, by cauſing obſtruction or acrimony, created another ſtimulus), or by opening obſtructed veſſels; or whether by the diſeaſe terminating of itſelf in diſcuſſion, by a diſſolution of the parts principally affected, or by its becoming inactive and leaving them in a ſtate of induration.

To conclude: it is plain the blood is ſent from the heart to every part of the body; becauſe if one of the ventricles is burſt, there is an end of the circulation. And ſeeing that neither increaſed action in the veſſels, nor increaſed motion in the blood, brings on inflammation; and that the nerves are the only part of the body which

can

can be irritated*; is it not equally ſelf-evident as the office of the heart, that the nerves alone give the preternatural heat of which we are ſpeaking? Becauſe their being irritated produces inflammation, and becauſe the preternatural heat goes off when they are no longer fretted or diſturbed. If a perſon is ſcalded very much, and the cream of lead † is inſtantly applied, the part will be rendered inſenſible to irritation and little or no inflammation follows. If the eye is inflamed, a drop of laudanum put into it every night, and the application of the lead cream externally, will often ſubdue the diſeaſe. A gentleman had a large cancer upon his arm, which was violently ſwelled from the ſhoulder to the fingers ends. The cream of lead was applied to the tumor, and in a few days the ſwelling above and below the cancer entirely diſappeared, owing

* See Diſſ. on the Nerves. † Cream of lead is made by vinegar of lead and cream.

probably to the ſedative power of the lead; all which fully prove the doctrine we have advanced, that inflammation is *accumulated heat, brought on by* nervous affection; and that redneſs, pain, tumor, and a quickened pulſe, are only attending ſymptoms.

ADDENDA.

Objections to the general opinion of a SYSTOLE *and* DIASTOLE *in the large* ARTERIES.

THAT the large arteries have a SYSTOLE and DIASTOLE, is an opinion probably coeval with the firſt feeling of the pulſe, and has been univerſally believed and taught by all writers, who have treated of their action. It is a doctrine received as ſelf-evident, conſequently has not been diſputed; and from what I have above written, it will appear that I adopted it in part upon truſt, like all thoſe who have

have gone before me. Yet it is eaſy to ſee, that it might, and probably did, ariſe from *conjecture*, upon feeling the beating of the artery; and, I do believe it will appear, upon experiment, to be void of truth.

Upon reflecting on the capillary arteries being deſtitute of motion, and on what HALLER ſaid about viewing the circulation in frogs and fiſhes *, ſince the foregoing eſſay was ſent to the preſs; I called to mind the appearance of the carotid arteries while the blood was pouring from them, in a deer † that was killed many

* Loc. cit. in Treatiſe on Inflammation.

† It is at leaſt twenty years ſince I ſaw this buck killed, but the appearance of the carotid arteries at that time made an impreſſion on me, which has conſtantly remained. It has even preſented itſelf to my mind's eye a thouſand times; yet having read *Harvey, Arteriarum Motus qualis ex vivorum Diſſectione*, and copy-books afterwards written by thoſe in high eſteem, I neglected the information, and ſuffered myſelf to be borne down by authority. Wherefore, I publiſh this note, as a freſh caution againſt truſting to plauſible opinions or great names. For great men, after all, are but men, and conſequently liable to error. And though books may

years ſince in my preſence: and I very well remembered that I neither ſaw the ſyſtole nor diaſtole in thoſe veſſels, the blood keeping one continued impetuous ſtream. I prevailed, therefore, to have ſome ſheep, doomed to ſlaughter, killed in the ſame manner; and having fair views of the divided arteries, was thoroughly convinced, that they neither contract nor dilate during the paſſage of the blood through them. They had a *progreſſive motion* at each contraction of the heart; ſeemingly from being elaſtic, and from the blood moving out of a wider to a narrower ſpace, which ceaſes when this muſcle is in its diaſtole: and the pulſe is therefore either occaſioned, by a ſhort progreſſive, or projectile and retrocedent motion in the arteries, or from the blood ſtriking againſt the ſides; inſtead of the cauſes which have hitherto been aſſigned.

lead to enquiry, this is a clear inſtance, that it is from nature only, that we can with certainty learn truth in medicine.

So far are the large arteries from becoming wider and narrower alternately, that their ſides have not *the leaſt motion* of this kind, whether the blood flows freely through them, or whether it is intercepted at the extremity of the divided veſſel; which experiment we made, to prevent our being miſtaken by any alteration that might happen, from the reſiſtance to the blood being entirely removed. But though the ſides of the veſſel were greatly diſtended, yet they were perfectly ſtill and quiet; the pulſation being at the end in the ſame manner as we perceive it, after tying the femoral artery in amputation above the knee: which we apprehend could not happen, if the action of the veſſel was in a different direction. Since this, we have made a great number of experiments, in which the carotid arteries were very often laid quite bare, four inches in length, without being divided: and though we could feel the pulſe beat

ſtrong and regular, there was no motion that either myſelf, or thoſe who ſtood by me could perceive in them. During the circulation, they ſeemed to be as quiet as a ſolid piece of wood. When divided, the projectile motion deſcribed might be, more or leſs, ſeen, but a ſyſtole or diaſtole could not be diſcovered; the ſides of the veſſels were perfectly ſtill, and the blood was diſcharged in an impetuous ſtream. It is curious to obſerve the manner in which the arteries adapt themſelves to the quantity of blood as it diminiſhes; and, I am led to think, that this contractile power of their middle coat, like an elaſtic ſpring, prevents their ſides giving way to the motion of the blood.

Indeed, every experiment I have made has fully proved that they do not alternately contract or dilate; which obſervations perfectly agree with the *facts* related by HALLER*. For though, in one place,

* Senſ. and Irrit. ſect 2.

he

he ſeems to adopt the theory of the contraction of the artery being alternate to that of the heart, yet in the next page he ſays, "in examining the circulation in "animals with the microſcope, *I never obſerved any contraction in the arteries.*" I am led, from the ſeveral experiments I have made, to believe, that what he ſaid about the ſides of the arteries, during the circulation in fiſh, &c. being as quiet as thoſe of the tube with which he examined them, holds equally true in all animals; for in thoſe arteries which were undivided, I could not even ſee the projectile motion I have deſcribed: nor is the contraction which takes place, after the blood ceaſes to move through them in living animals, any thing in favour of a contrary opinion; the cauſe which prevented it being removed. Hence, though there may be a motion in diſeaſed arteries, their coats giving way to the force of the blood; yet no inference can be drawn

from this fact, regarding thoſe in a natural ſtate.

Indeed, it appears to me from theſe experiments, that were the ſides of the arteries to contract in the manner writers aſſert, it would impede the circulation; and that the heart * itſelf forces the blood through the arteries: that the motion deſcribed is ſuch as muſt naturally happen, and though artificial machines differ much from the human body, yet they clearly demonſtrate, that fluids may be forced in a perfect ſtream, through pipes of very conſiderable length, by ſtrong preſſure only at one end of them, and it is certain, the heart and arteries are formed upon the beſt princi-

* In oppoſition it may perhaps be ſaid, that the circulation has been carried on, even after the heart has been removed. But it muſt be remembered, that this circulation as it is called, could only happen in the ſmall veſſels, for which a cauſe independent of any motion of the heart or arteries has already been aſſigned; and which may continue to act, ſo long as the nerves are alive, which is often a conſiderable time after the animal appears to be dead.

ples

ples for this purpoſe. The common injecting ſyringe throws wax from the heart, through all the arteries of a child immerſed in warm water, in an inſtant. If the leathern tube of a fire-engine were made elaſtic, and ſome what conical like the arteries; I doubt not, were its end at liberty or incloſed in a ligature, but it would undergo a ſimilar motion from the paſſage of the water: and I am perſuaded this inſtrument repreſents the manner in which the blood is made to circulate through the body. All which ſeems to be confirmed by the different and even oppoſite accounts, Haller has given about this matter, in his Diſſertation and ſubſequent papers on the Motion of the Blood; which I have read ſince the experiments above mentioned were made. The pulſations he ſometimes ſaw in the arteries, were undoubtedly that we have deſcribed; being made in the ſame manner, by their being *lengthened* at the time the heart contracts. They were

were principally evident when a ligature was made upon the arteries, or in the angles of flexion, but in the parts beyond they were loſt; which ſeems to prove, that the *lengthening* of the veſſel was owing to the blood meeting with, more or leſs, reſiſtance from theſe cauſes; becauſe it ceaſed when the blood paſſed the curve into a right line. He alſo tells us, that though a pulſe may be ſeen in thoſe arteries which have thin coats, yet it is nôt to be diſcovered where their coats are ſtrong; which accounts for his not being able to obſerve it in goats *, and a great many other animals. Every one of his experiments prove, that the arteries have no ſyſtole; and we believe, whenever a viſible motion happens in them, it is owing to ſome accident or peculiar circumſtance.

I believe many arguments might be brought in ſupport of theſe obſervations;

* Exper. 50.

and it may be ſaid, much reaſoning may be oppoſed to them. But as we have already been too long deceived by ſuggeſtions, I appeal to experiment, the teſt of truth, which may be readily made without cruelty. I only wiſh the unprejudiced eye to direct the judgment, and if what I have aſſerted be true, it will fully prove the doctrine I have endeavoured to eſtabliſh, about the arteries being not irritable; and refute that theory of diſeaſes, which has ariſen from a contrary opinion.

CHAP.

CHAP. II.

ON THE TERMINATION OF INFLAMMATION.

On the Manner in which Nature herſelf terminates different Kinds of Inflammations.

Galen's theory productive of error.

GALEN, from whoſe theory many errors in phyſic have ſprung, adviſes to attempt diſcuſſion in all inflammation ariſing from fluxion, by different evacuations, till ſigns of matter appear; and then a contrary method is to be purſued *. And this doctrine, ſeemingly without being examined, has been copied from one writer to another down to our own times: the modern books in general directing us to bleed and purge, and to attempt diſcuſſion by every other method, upon the firſt appearance of inflammation. But if it reſiſts all diſcutient means, we are then to deſiſt from farther evacuation, and as much as poſſible to aſſiſt nature in bringing on ſuppuration. But is not this acting with confeſſed uncertainty? And ſhall we not

* De Arte Curat. ad Glacu, lib. ii. cap. 2.

always

always be doing wrong, when the inflammation is incapable of being diſperſed? A criterion ought to have been fixed when to attempt diſcuſſion, and when to let it alone; and before we proceed to a method of cure, we will try to remove this defect.

Which is removed by examining nature.

For this purpoſe, we muſt enquire into the manner in which nature herſelf terminates different kinds of inflammation; and previous to this enquiry we muſt obſerve, that we uſed the word *diſcuſſion* in the laſt chapter, in the common manner, to ſignify that proceſs which removes the diſeaſe, without any external ſolution of continuity, excepting in the cuticle. By a diſſolution of the parts principally affected, we are to underſtand both ſuppuration and mortification, which ſeem only to differ in the manner in which the parts are diſſolved; and by induration, we mean thoſe hardneſſes in the cellular membrane, &c. which frequently happen after parts have

have been inflamed; and a hardneſs in the glands, diſtinct from ſcirrhi, which we look upon to be a diſeaſe *ſui generis*, and not an object of preſent enquiry.

The manner in which nature herſelf terminates inflammation under different circumſtances.

If inflammation is confined to the ſkin, it either terminates by diſperſion or mortification, as will hereafter be proved. The ſame may be ſaid when the inflammation happens in membranes or tendons; for if it does not diſperſe, the part ſloughs away in rags. The inflammatory rheumatiſm never brings on either ſuppuration or mortification; and of courſe, when it removes, muſt go off by diſperſion. The gout, and the œdema attended with inflammation, when they leave the patient regularly, always terminate in the ſame manner.

When glands are inflamed from a fault in the fluids paſſing through them, the inflammation diſperſes, ſuppuration comes on, or induration follows, according to the continuance and activity of the offending matter.

If

If its ſtay is not ſufficiently long to corrode the veſſels, in which it ſtagnates, it returns again into the circulation, and the inflammation diſappears; as we ſee in the glands in the axilla, which inflame after inoculation. If it remains in the gland a conſiderable time, the ſame inſtance evinces, that it corrodes through, ſeizes upon the adjoining cellular and adipoſe membrane, and brings on ſuppuration: but if the matter ſtagnating is of a leſs active nature, and incapable of corroding, induration is the conſequence.

When a metaſtaſis of matter, not very acrid, in any conſiderable quantity, happens into the cellular membrane, an abſceſs will moſtly be the conſequence; becauſe it will diſſolve the fat and oil together with the membrane, when by heat, and, perhaps, ſome kind of fermentation, pus is formed*: which either corrodes its way through the ſkin, is wholly taken up by the abſorbent veſſels, and the ſkin

* See Abſceſſes.

and

and the parts underneath unite; or a hardneſs, occaſioned by inſpiſſated matter, is left behind. When the matter which is lodged in the cellular membrane is very *acrid*, inſtead of forming mild pus, it converts the fat and oil into a highly corroſive ichor; and a diſſolution of the membranes and ſkin follows, from its being a cauſtic, and producing a mortification *. Sometimes a particular kind of acrimony effects an intermediate way of diſſolution, for *it* criſps up and corrodes the adipoſe membrane; and when the tumor breaks, or is opened, a clear hot ichor, reſembling brine, is diſcharged †. At other times the cellular membrane is leſs criſped, and ſeparates half diſſolved, as we ſee daily in

* See Mortification.

† A ſurgeon, who had been a hard drinker, was ſeized with an inflammation in his breaſt, which extended to the axilla. A tumor followed, and diſcharged upon being opened, more than a pint of exceſſive hot clear ichor. The cellular membrane was criſped up into ſtrings, and a good deal of extravaſated blood was alſo criſped into the ſame form; but dreſſing the ulcer with a digeſtive balſam, digeſtion enſued, and he was cured in the common manner.

the

the carbuncle; owing probably to a difference in the nature and virulence of this kind of acrimony.

Hence we ſee, that the different terminations of inflammation ariſe from the *nature* and *ſituation* of the offending cauſe; for the ſame kind of matter, differently ſituated, will produce different effects. In the phlegmonoide eryſipelas, where part of the offending matter is lodged in the ſkin, and part in the cellular membrane, the ſkin ſometimes mortifies while good matter is formed underneath. And this knowledge leads us to a true method of cure, without interrupting nature, or without the great perplexity and confuſion we meet with in writers upon this ſubject. But to make the matter plainer, we will conſider inflammation of the ſeveral parts mentioned diſtinctly, with their proper method of cure; beginning with a ſimple inflammation of the ſkin, which, both on account of its ſituation and ſimplicity, firſt attracts our attention.

CHAP. III.

OF A SIMPLE INFLAMMATION OF THE SKIN, AND ITS CURE.

BY a ſimple inflammation of the ſkin, we mean a diſeaſe entirely confined to this part, and differing very much from a true eryſipelas. Its external appearance is only heat and redneſs, and by the touch we diſcover it does not extend farther than the outward covering of the body, excepting by nervous ſympathy. Stimuli, externally applied, are a frequent cauſe of this diſeaſe; nor does it unfrequently happen by a metaſtaſis of matter from the blood.

Now the reaſon why a ſimple inflammation of the ſkin, either terminates by diſperſion or mortification, is probably becauſe the ſkin is incapable of being converted into matter. I think lymph is never changed into pus, unleſs it is extravaſated into ſome cavity, where it meets with fat or oil; or into

into ulcers, or upon a part where by heat the more volatile parts are made to fly off, and a ſediment is left behind. Therefore, unleſs the inflammation goes off by a natural ſubſiding of the diſeaſe, or the lymph being diſcharged and collected under the cuticle on the ſurface of the body, a mortification muſt enſue; in conſequence of that acrimony the juices will acquire by heat and long ſtagnation, in a part where there is not a ſufficient quantity of fat or oil to correct their virulence. Diſcuſſion, therefore, is the only aſſiſtance that can be given to nature with propriety. And this may be accompliſhed almoſt with a degree of certainty, becauſe topical remedies come in contact with the veſſels and fibres of the affected parts.

But in the preſent caſe, where we can remove the irritating cauſe, the inflammation for the moſt part ſoon diſappears with very little aſſiſtance; and when this is not accompliſhed, the ſkin in ſome inſtances

ſeparates into rags, as we ſee in the breaſts of lying-in women. This circumſtance muſt be well known to thoſe ſurgeons who have had a conſiderable ſhare of practice in midwifery. The diſorder takes its riſe commonly from acrid lymph ſtagnating in the ſkin, which by degrees acquires the colour of parchment; and we ſuppoſe is the diſeaſe which has been called the white gangrene. After ſeparating, in the manner deſcribed, the ulcer readily heals by ſimple dreſſings; as the diſorder, at leaſt in every inſtance I have ſeen, is local.

However, ſimple as this diſorder is, more or leſs aſſiſtance is commonly wanting; and, according to our general doctrine of inflammation, the cure muſt conſiſt in ſubduing preternatural heat, either by removing ſtimuli, or by rendering the nerves inſenſible to irritation. In many inſtances theſe intentions are to be purſued at the ſame time, but in both the examples before

fore us, the firſt ſtep, if poſſible, is to remove the irritating cauſe; though different methods are neceſſary for this purpoſe. When it is ſeated externally, every man's own judgment points out to him the manner in which ſtimuli are to be removed. Afterward, thoſe remedies ſhould be choſen, which both leſſen irritability and abate heat; and for theſe purpoſes there is not any thing excells the application of the cream of lead, ſpread thick upon linen cloth, and applied as often as the cloth becomes dry. Cream, or milk, and the vinegar of lead make an exceeding cold mixture, which powerfully anſwers both theſe purpoſes; it ſcarcely ever fails to diſcuſs this kind of inflammation in a very little time; and though it is a much ſtronger remedy than any Goulard applies, yet it may be uſed with the utmoſt ſafety. Cold water alſo, in this inſtance, is an excellent remedy; linen cloth, wet in many doubles, being renewed as often as they become warm. A man of a very irritable

habit had his whole leg invaded with this diſeaſe, from horſe-turpentine being applied to a ſmall wound. It was exceeding hot and painful, and had brought on a fever; but cold water alone put an end to this complaint, by being poured frequently upon wet cloths, which ſurrounded the affected part. The heat was even ſo great as to ſend out at firſt a very conſiderable ſteam from the linen; but the patient finding eaſe from the remedy, purſued the cooling intention till the malady was ſubdued. I have frequently ſeen ſimilar ſucceſs from this remedy. The *ceratum ex aqua frigida Galeni* * will be found very effectual; and upon the ſame plan, though leſs powerful, the ointments loaded with the cooling juices of plants were applied.

If the irritating cauſe has been of long continuance, it may have drawn a flux of humours upon the part, occaſioned ob-

* *Cera cum olio optimo liquatur et ceratum liquidum fit, quod frige factum in mortario aqua frigida paulatim inſtillata quantum imbibere poteſt, cum piſtillo teretur.*

ſtruc-

ſtruction, and created a new ſtimulus, which will keep up inflammation though the firſt cauſe is taken away; and deobſtruents muſt be added to our topics before the diſeaſe can be wholly removed *: but they ſhould be of that kind, which have a diſſolving power, and yet rendered incapable of doing injury by the irritating property uſual in remedies of this claſs. The neutral ſalts † will furniſh us with topics enow of this kind, if the nerves are rendered inſenſible to their action, by uniting with them ſome of the preparations of lead, formed into an ointment of the conſiſtence of well made nutritum, that it may lie eaſy upon the part, and abate tenſion without relaxing too much. When the obſtruction is thus removed, which the ſubſiding of the ſwelling will diſcover, the ſalt being omitted, the ointment alone may finiſh the cure.

* See Introduction, example iv.

† A very ſmall quantity is ſufficient; if we put in too much, it increaſes the inflammation, and prevents the diſcharge.

The ſame treatment is required when the inflammation ariſes from a metaſtaſis of matter from the blood; except that the neutral ſalts ſhould be more at liberty to act, and make a diſcharge from the veſſels of the ſkin. Which may as effectually be unloaded by this means, as the veſſels of the inteſtines, by a doſe of purging ſalts. It is thus we may aſſiſt nature in finiſhing the work ſhe has begun.

It will frequently happen that no other proceſs is neceſſary; but if coſtiveneſs or the like requires opening medicines, they ſhould be given. If the diſeaſe ſhould ever occaſion any conſiderable degree of fever, the inward treatment ſhould correſpond with that purſued outwardly. If the plan of extinguiſhing heat by coolers takes place, cooling medicines ſhould be given; but when a diſcharge from the ſkin is attempted, *ſpiritus Mindereri*, or ſome ſuch medicine is preferable.

CHAP.

CHAP. IV.

ON THE ERYSIPELAS IN GENERAL.

AN eryſipelas, upon enquiry, will be found to be a compound diſeaſe, and not wholly confined to the ſkin, as Galen and his followers have taught *: nor does it appear, from the writings of Hippocrates, that he uſed the words eryſipelas and *ignis ſacer* ſynonymouſly. In his chapter *De Morbo Sacro*, the eryſipelas is not mentioned; nor do I find when he treats of the eryſipelas, that he ſays any thing of the *ignis ſacer*. After Galen's time, indeed, the Greeks gave the name of *eryſipelas* to this diſeaſe; and their opinion has been foiſted into the text of HIPPOCRATES by tranſlators. For inſtance, in ſpeaking of an *eryſipelas* in the *uterus*, *De natura Muliebri*, ſect. xii. the Greek paſſage is Ην δε ερυσιπελας εν τησι μητρηζιν εγγενηται, which

Eryſipelas a compound diſeaſe.

Eryſipelas and ignis ſacer diſtinct diſeaſes.

* *Si exquiſitum fuerit eryſipelas, ſola cutis eſt effecta.* Method. Med. ad Glaucon, lib. ii. cap. 1.

is tranſlated *ſi ignis ſacer eryſipelas dictus in utero oboriatur, &c.* and the ſame miſtake occurs again, in his predictions and other places.

Celſus manifeſtly made a diſtinction betwixt theſe diſeaſes. His deſcription of the *ignis ſacer* no wiſe agrees with Galen's account of the eryſipelas; nor is it true that he divided the eryſipelas into two ſorts, the ſimple and the ulcerated, giving the name of *ignis ſacer* to the latter: for he tells us, (lib. v. cap. 26.) that eryſipelas is a name given to an inflammation attending gangrenes and wounds; though it ſometimes happens without them, for which there is no term in the Latin language; and he therefore uſes the Greek word Ερυσιπελας. Andernacus * obſerves, *Multi inter Latinos ſcriptores interpretantur Eryſipelas ſacrum ignem. Celſus autem hunc ab illo ſeparat, eoque malo Græca uti dictione quam expoſitione eſſe obſcurus.* In another place (lib. v. cap. 28.) he ſpeaks

* Paulus Æginetæ Cap. lib. iv. cap. 21.

of

of the *ignis ſacer*, and as he has a name for it in his own tongue, it is plain he could not mean the ſame diſeaſe. This, indeed, he divides into two ſpecies; his deſcription of the firſt ſeeming to agree with what is now called a *herpes*, and the latter to be only a greater degree of the ſame diſeaſe. In this light both Aquapendens * and Wiſeman † think Celſus ought to be underſtood. Modern writers, indeed, have imagined that the ulcerated eryſipelas may properly be called the *ignis ſacer*, but I ſee no authority for this ſuppoſition. I believe different diſeaſes have by this means been conſidered as the ſame complaint, and will, therefore, treat of that kind of eryſipelas deſcribed by Galen ‡.

This is copied into almoſt every book ſince written on the ſubject. Writers have been very exact in tranſcribing his diſtinction betwixt a phlegmone §, and an

* Oper. Chirur. lib. i. cap. 12. † Book i. chap. 17.
‡ Meth. Medendi, lib. xiv. § See Abſceſs.

eryſipelas;

eryſipelas; and in particular have followed him in aſſerting, that the pale colour which ariſes upon preſſing the part with a finger, and its becoming red again, is a certain mark of the diſeaſe; whereas it is common, more or leſs, to all external inflammations. The moſt material diſtinctions are the citron colour, and the ſkin being *thickened* and *dilated*; whereas in a phlegmone the ſkin is only red, is elevated, and has, more or leſs, a conical form. However, though the Galenic deſcription has been ſo implicitly copied, yet there have not been wanting ſome diſſenters from the ancient opinion regarding the nature and cure of this diſeaſe; though even this paſſed uncontroverted till the late Baron Van Swieten, (ſect. 280.) endeavoured to prove, that the yellow colour did not ariſe from bile, but from a yellowneſs in the ſerum of the blood. But Dr. Mageniſe * not being ſatisfied with

The ſymptoms which diſtinguiſh an eryſipelas

* On Inflammation.

this

this reaſoning, has ſince called in the aid of chemiſtry to ſettle the matter; and aſks, whether the blood may not change its colour, from red to yellow, on being decompoſed by the heat and pulſation of an inflamed part? Though if this ſhould be admitted, muſt not every inflammation be of the ſame colour? Some modern writers, who ſtill prefer the ancient notion of bile being the cauſe of this diſeaſe, do not conſider that they are talking of a local jaundice, with effects, which never ariſe when we are certain bile is diffuſed upon the ſurface of the ſkin. But let us leave conjecture and attend to facts, which may, perhaps, ſettle this difficulty.

A new opinion.

If the membrane lining the throat is inflamed, does it not produce an eryſipelas? If the *aponeuroſis* of the *biceps* tendon is pricked in bleeding, and the ſubſequent ſymptoms riſe to any conſiderable height, does not an eryſipelas always enſue? I have ſeen the *faſcia lata* of the

leg laid bare and ſlightly wounded, which brought on a violent eryſipelas from the knee to the ancle. Is not an eryſipelas a common conſequence of the tendinous expanſion in the end of the finger being inflamed in a *paronychia maligna?* In neglected bruiſes of the head, the *dura mater* ſometimes inflames and brings on an eryſipelas of the whole head and face. And is any thing more common than for this diſeaſe to follow wounds of the head where the pericranium is ſlightly wounded, or where the diſcharge from a wounded membrane, is ſuppreſſed by acceſs of cold air? If the inflammation is very great, a delirium is ſometimes the conſequence, from the connection betwixt the veſſels on the inſide and outſide of the ſkull; and does not the ſame thing happen, when the matter in a critical eryſipelas of the head, is repelled by improper applications? Which evinces that the ſame parts are affected in both caſes, and that the matter is carried back

The membranes the ſeat of an eryſipelas.

to

to the brain by the ſame order of veſſels. A man was lately ſeized with a fever, and after two or three days continuance an eryſipelas began to appear about his noſe, which ſoon ſpread itſelf to his ears, and over the whole head. The membranes in his throat, in the auditory paſſage, and in the urethra, were ſeized with the ſame kind of inflammation; and an eryſipelatous efflorescence appeared, more or leſs, all over his body, plainly ſhewing the complaint to be a diſeaſe of the membranes. Hence it ſeems equally evident, as when we trace the continuance of blood-veſſels by wax, that there is a ſet of lymphatics which paſs from the membranes and terminate in the ſkin. There is every reaſon to believe, that particular fluids paſs through particular parts; and ſuppoſing the juices in an eryſipelas, from an internal cauſe, which paſs through and nouriſh the membranes, to have become acrid, it follows that arriving

Inſtance of the membranes being the ſeat of this diſeaſe.

riving in the ultimate veſſels deſcribed, it will irritate and produce inflammation. Nor is this ſuppoſition unſupported by facts; for the matter abſorbed from ulcerated legs, cancers, and from crude abſceſſes, by contaminating the juices, are frequently the cauſe of this diſeaſe: may it not, therefore, ariſe from any other cauſe which renders them incapable of paſſing through the membranes without irritating? The yellowiſh red colour ariſes from a ſimple inflammation of the ſkin, and an inflammation of the membranes being united; for the yellowiſh ichor in the latter of theſe diſeaſes, which ſtagnates in the extreme veſſels, irritates, and invites the red blood into the lymphatics of the outward covering of the body. Upon the whole, may we not ſafely conclude, that an eryſipelas originates in, and is chiefly an affection of, the membranes, either from their veſſels,

Eryſipelas, what it is.

or

or fluids which paſs through them, being diſeaſed?

We ſee then how an eryſipelas may ariſe, either from an external or an internal cauſe. A ſudden blaſt of cold froſty air, inſolation, or wounds in the membranes, often produce it. At one time it ariſes from a bad habit of body, at another it is epidemic, and varies according to the nature of the *miaſmata* that occaſion it; wherefore, it follows, that *eryſipelata* are either local or general, and we ſhall ſpeak of the methods of cure ſeparately, under theſe different heads. Cauſes of eryſipelas.

CHAP. V.

ON THE CURE OF AN ERYSIPELAS.

The cure of this diſeaſe has been conducted with confuſion.

AS neither the membranes nor ſkin, which ſeem to be the parts affected in this diſeaſe, can ſuppurate, it is evident diſcuſſion is the only rational method of attempting a cure: and though practitioners, from the earlieſt time, have all along preferred this mode of treatment; yet there is not any diſeaſe, perhaps, in which there has been more perplexity and confuſion in the choice of topical remedies for this purpoſe; or where common ſenſe has been more over-balanced by hypotheſis: but to underſtand this matter properly, a ſhort hiſtory is neceſſary.

Hippocrates, ſaid that ſtriking in an eryſipelas is bad*; and alſo, that the application of cold things helped this diſeaſe when free from ulcers †; and whether the

* Aphor. xxv. ſect. 6. † Aphor. xxiii. ſect. 5.

eryſipelas of Hippocrates and Galen were the ſame diſeaſe or not, Galen * and his followers adopted both theſe doctrines. They agreed that the matter occaſioning this inflammation ought to tranſpire; but an opinion of its being occaſioned by hot bilious blood, led them to think that it required a treatment different from other inflammations, and that innate coolers were neceſſary. Accordingly linen cloths wet in the juices of cooling herbs, cataplaſms made of theſe juices and linſeed or barley-flour, cloths wet in equal parts of vinegar and water, or in great inflammation the cerate of cold water, were uſed on this occaſion.

Unfortunately, however, the herpes was alſo ſuppoſed to ariſe from hot bilious blood, and to be a ſpecies of this diſeaſe; and though a very oppoſite method of treatment was purſued in this malady, yet

* Method. Med. lib. xiv. et de Comp. Med. lib. i. ſecund. gen.

they were both handed down as remedies againſt an eryſipelas. We find in Galen's fifth book *de Comp. Med. ſecund. gen.* a compoſition called *paſtillus ad eryſipelata* of acacia, myſios, opium, frankincenſe, and vinegar, originally uſed in the herpes; together with the cooling practice, and Galen's cerate, copied into the ſame chapter, by AETIUS, PAULUS, and other compilers. AEtius * though he treats of the ignis ſacer and eryſipelas under ſeparate heads, yet he conſiders them both as the ſame diſeaſe; and favoured the opinion that they both aroſe nearly from the ſame cauſe. Accordingly there does not appear to have been any great difference in his treatment of theſe diſorders. In his chapter on the eryſipelas, he ſays, "Paſtes were not only applied to the inflamed, but alſo to the neighbouring parts; and were to be aſſiduouſly removed, becauſe they

* De Febric. &c. ſermo i. cap. 89. De Affect. ſed. ſermo ii. cap. 59.

ſoon became dry and loſt their virtue." He not only tranſcribes the above preſcription from Galen, but alſo two nearly alike from ANDROMACHUS and ORIBASIUS, compoſed of litharge, ceruſe, opium, live ſulphur, ſaffron, and ſweet wine: and very gravely tells us that a ſwallow's-neſt powdered, ſifted and mixed with honey, makes a cerate that ſoon diſcuſſes an eryſipelas in the face! But while the Greeks were favouring very different kinds of practice, the Arabians adhered cloſer to the cooling method, carrying it ſo far as to apply cold water till the inflammation diſappeared: though Avicenna himſelf adviſes in the beginning to join ſtyptics along with the cooling juices * commonly uſed; and afterward cautions againſt repelling the eryſipelatous matter!

* Lib. iv. cap. 5. This doctrine ſeems to have been taken from Galen's common practice of uſing repellents in the beginning of inflammation. De Comp. Med. ſecund. loc. lib. vi.

Nevertheleſs the general opinion was till the days of Parey *, that in the beginning and increaſe of this diſeaſe, the topical applications ſhould be cold and moiſt, without any dryncſs or aſtringency; becauſe the more acrid matter being driven inward, by the uſe of aſtringent applications, would injure the adjacent parts. Liniments were ſtill in uſe, compoſed of wax, oil, and the cooling juices, but not till the heat and pain became intolerable; and then they followed the practice † of joining opium along with them, to mitigate theſe ſymptoms. When the heat, foreneſs, and pain abated, they were laid aſide; leſt the opium ſhould bring on a mortification by extinguiſhing native heat. Afterward cataplaſms, or diapalma diſſolved in oil, finiſhed the cure.

Veſalius is the firſt writer I have met with, who treats this diſeaſe in a different manner; for notwithſtanding he purſued the practice of uſing the juice of cooling

* Lib. vii. cap. 13. † See Paulus, lib. iv. cap. 21.

herbs

herbs in ſponge, he decried narcotics, ſuppoſing they would deſtroy the parts by their cold property; and he did not apply ointments till the heat ceaſed, becauſe he was of opinion that unctuous medicaments were of an emplaſtic nature, and ſtopped up the pores; and becauſe oil readily acquires an inflammatory diſpoſition *. Galen, in his ſixth book of Preſerving Health, adviſes anointing with oil after bathing, to prevent, by its emplaſtic property, great perſpiration; but though he never applied this doctrine to the cure of an eryſipelas, yet after-writers, from what he had ſaid, thought oil muſt be highly pernicious in a diſeaſe, where it was imagined tranſpiration was ſo eſſentially neceſſary: and the many converts to theſe opinions made them become general, without any experiment being

* In this tranſlation, the meaning of the author is attended to; his own words are, *Idem dicendum de medicamentis unctuoſis, qui ſua unctuoſitate emplaſtrum partem, & halitus non poteſt egredi. Secundo quia oleum facile inflammatur.* Chirur. Mag. cap. 14 lib. v.

made to prove whether they were true or falſe.

I imagine, however, that this doctrine did not become popular for ſome time, becauſe Fabricius ab Aquapendente, a moſt exact compiler, who immediately ſucceeded Veſalius, omits it; and, after taking a view of the practice of former times, prefers an ointment, in which ſedatives and ſtimulants were joined, unleſs the diſeaſe is in the head. Where the head is the ſeat of the diſorder, he in one place thinks all kinds of application improper; and in another, where he thoroughly debates this matter, he ſays, hot applications ſhould not be uſed, becauſe they will invite a flux of humours; nor thoſe which are cold, becauſe they repel them; but when the heat and pain are great, he recommends eaſing the pain by anointing the part with oil of ſweet almonds, or with a decoction of mallows, in which there is a portion of oil of violets; and, laſtly, finiſhes

finiſhes the cure by applying the ſwallow's-neſt cataplaſm of Aetius.

Succeeding writers did not imitate any part of this practice, except agreeing that refrigerants were hurtful; and they added, that remedies which penetrate into, and diſſolve, the offending matter, are moſt proper; but they choſe for this purpoſe ſpirit of wine, *lapis medicamentoſus*, and ſuch like combuſtibles*. Indeed, as unctuous and cooling remedies were *argued* out of practice, the oppoſite method, before ſpoken of, calculated for an herpes, took place: nor did chemiſtry mend the matter; for though, the chemiſts changed the theory of this diſeaſe, they uſed nearly the ſame topics. They told us that the ſubtile, hot, thin, bilious blood, in this diſorder † abounded with a *volatile acid*, and the topical applications ſhould be compoſed of moderate repellents and vo-

* Read Muſitanus, cap. xi. de Eryſipelata.

† Munnicks, lib. i. cap. 5.

latile

latile reſolvents, to correct this acidity. But the remedies preſcribed do not ſeem to have tallied well with their intention. Sugar of lead, litharge, troches of Rhazes, camphor, flower of brimſtone, &c. were uſed for this purpoſe, either made into an epithem with elder-flower water, ſpirit of wine, and vinegar, or into an ointment with oil and white wax.

Applications of this kind would, no doubt, be injurious if repellents could do injury: ſo that hyphotheſis in one inſtance, and practice in another, made it appear that topics were dangerous; for notwithſtanding the preparations of lead, commonly uſed on this occaſion, are ſedatives, and, when properly managed, abate inflammation, yet when joined with ſpirit of wine, troches of Rhazes, lime-water, &c. they are incapable of preventing miſchief; nor have they in themſelves any power or tendency to promote a diſcharge by the ſkin, but rather to prevent it. It

is

is not, therefore, any wonder if ill conſequences, ſuch as repelling the morbific matter, bringing on mortifications, and other like accidents, ſhould frequently happen from remedies perfectly capable of inflaming the veſſels and obſtructing tranſpiration; of which there are inſtances to be met with on record: and it was probably owing to accidents brought on by this mode of proceeding, that ſome writers have forbidden the uſe of outward applications.

The inflammation, if left to itſelf, would, no doubt, frequently become exceedingly troubleſome; which put practitioners upon the ſearch for external remedies. Thoſe who adopted the chimerical opinion, that a volatile acid occaſioned the miſchief, adviſe chalk, in powder, to be ſtrewed upon the inflamed part; and others, who ſeem to have proceeded without any principles to act upon, employed either empirical remedies, or ſuch as an ill-

ill-grounded theory ſuggeſted. Some uſed fomentations of ſoap, others medicated bags filled with elder-flowers, moiſtened with wine and water, or vinegar; ſome, a decoction of ſheep's dung in wine; while others again employed epithems, compoſed of Venice treacle and ſpirit of wine. Some thought lixivium and oil a better remedy; others preferred a poultice made of oatmeal and water, without boiling; ſo fearful were they of any thing unctuous coming to the affected part. A variety of other remedies were employed by different preſcribers, and ſuch uncertainty in the mode of proceeding will ever be the conſequence when common ſenſe is not the ſtandard of practice.

In this ſtate of diſorderly practice Hoffman, who muſt, in this inſtance, be directed chiefly by theory, adhered to the method of applying dry medicated powders; and modern phyſicians have followed his plan, though they have ſubſtituted wheat-

flour,

flour, or Peruvian bark in powder, as more proper remedies. So firmly were the faculty perſuaded, by copying from one writer to another, that topics were prejudicial, that even Dr. Mead cautioned againſt the uſe of hot fomentations and cooling ointments in this diſeaſe. But the queſtion is, did Dr. Mead, or any former writer, ever ſee any inconvenience from cooling ointments or emollient cataplaſms? or did he adopt this doctrine, which we have ſeen aroſe in ſpeculation, from its becoming an axiom, by being long continued in medical books? The miſchief was certainly occaſioned by the heating, and not by the cooling topics; and why they both equally grew into diſcredit, has already been explained.

I know, indeed, that mortifications have happened in this diſeaſe, under the uſe of emollients: for inſtance, Hildanus* gives the caſe of a farmer, where a phleg-

* Ob. lxxxii. p, 59.

monoide

monoide eryſipelas of the hand and arm being anointed with oil of roſes, the inflammation increaſed, and a mortification ſeized the whole hand. But it does not follow that the increaſe of inflammation and enſuing mortification were owing to this remedy; they more probably aroſe from the ſtrength of the diſeaſe, which the oil was incapable of ſubduing. Mortification is a natural termination of this diſeaſe, when the inflammation cannot be kept within bounds; and this will ſometimes happen under the moſt judicious management. Hildanus's caſe ſeems to have been a local mortification of the ſkin, and I have ſeen many inſtances of this ſort; plenty of good matter appears underneath, and they terminate happily with mild digeſtives, after the ſeparation has taken place, under an emollient poultice. *.

I have ſeen horrid conſequences from the practice more generally recommended!

* See Mortification.

If

If no application is uſed where the diſeaſe is conſiderable, the inflammation increaſes, the parts grow more irritable, greater pain with a more violent fever follow, and a local mortification may be the fatal reſult. If flour, or medicated powders are uſed, all we can expect from them is to drink up the matter which exudes; and, by forming a cruſt, they become very troubleſome, if they do not produce bad conſequences. We have already cited a caſe, where a mortification and death followed the application of wheat-flour; and we have lately ſeen a mortification brought on in a *paronycha maligna* by the ſame remedy: for though wheat-flour has not any property in itſelf deſtructive to the part to which it is applied, yet it ſuffers the diſeaſe to increaſe without interruption till it ſometimes deſtroys the part it affects. Nor are wool, fir, cabbage, or vine leaves, which ſome have recommended, to be depended upon, except in

ſlight

ſlight caſes; and whether a different method of proceeding where topics are neceſſary is not preferable, will hereafter appear. But to remove every prejudice brought on by theoriſts, let us firſt examine the practice of thoſe, whoſe medical department enabled them to be better judges of the effects of outward remedies.

Is there a more cooling ointment than the *ceratum ex aqua frigida Galeni*; and was it not uſed for many centuries without impeachment? Aquapendens, after collecting together almoſt all that had been written upon the ſubject, and maturely conſidering the matter, adviſes the uſe of oil of almonds, a decoction of mallows, and oil of violets, to an eryſipelas in the head and face, when heat and pain made them neceſſary: and ſurely, if theſe topics were proper when the inflammation in this part was great, they could not be unſafe where the diſeaſe was leſs violent, or when ſeated in a leſs important part of the body.

Peter

Peter Lowe *, from his own practice, recommends the cerate of Galen, the unguentum alb. camphor, or a cataplaſm, compoſed of barley-flour, linſeed, oxycrate, powder of chamomile and oil. Sculletus † ſays, he has cured innumerable eryſipelata of the extremities with a ſimple liniment, not neglecting internally the uſe of univerſals, and cooling remedies.

Wiſeman talks of the current doctrine and remedies generally uſed; but ſays, "in a critical eryſipelas, *a cerate of* "*white wax and oil hath hitherto ſerved* "*my purpoſe*; and as the bliſters ariſe, I "cut them to prevent eroſion." Indeed, he ſometimes fomented the part with a decoction of ſage, and ſope diſſolved in it, or milk, before he applied this cerate; and he adds, the *unguentum nutritum*, with a *third-part* populeon, is proper. But when the eryſipelas was in the face, he

* Lib. iv. p. 102.

† Armament Chirur. p. 304.

was led by the common opinion, that a different method muſt be purſued; and applied lime-water and linſeed oil, ſhaken together, or the remedy which is now called the vegeto mineral-water of Goulard, mixed with oil: but if theſe were ſafe, was not there more ſafety in his ſimple cerate, which is free from aſtringency?

The ſame may be ſaid of Turner, who forbids cold, repelling, or reſtringing applications; "but why unctions of all "kinds, ſays he, and without exception "of caſes, as they are by ſome, ſhould be "forbidden, I cannot ſee: nor, perhaps, "ſhall we find a better, eſpecially upon "the remote or extreme parts, than are "the oil, and *unguentem ex floribus cum "cortice interiore atque folici ſambuci pre-"parata*, which by relaxing the *fibrillæ* "abate the tenſion, and thereby take off "the pain and inflammation." Nevertheleſs he could not get quite clear of the prejudices of education; and, therefore, adviſes

adviſes, by way of caution, an epithem of camphorated brandy, where the diſeaſe is ſeated near the brain! Can there be a ſtronger inſtance to ſhew how far theory will operate againſt common ſenſe?

Heiſter adopted the doctrine that acids, fat, and oily things, obſtruct tranſpiration; and of courſe adviſes the applications before recommended by thoſe in the ſame perſuaſion *. But amidſt the praiſe of liquid, ſpirituous, and dry applications, he departs from his principles in adding, "we need not ſay much here of the green "internal, or middle bark of elder, whoſe "eminent virtue in inflammations is al-"moſt known by every body, and has "been this long time confirmed by con-"ſtant experience." But ſurely, if this emollient is ſo highly uſeful, drying powders could not be recommended with equal

* Their theory had carried them to the application of rob of elder, ſpread upon *blue* paper, which was not only free from any thing fat or oily, but alſo from the neceſſary properties to abate inflammation.

propriety. Indeed, we have ſeen other writers, of much experience, ſpeak of the good effects of cooling ointments, and emollient cataplaſms in this diſeaſe; and yet were ſo deterred from their uſe, by the cautions they met with in books, that they durſt not recommend them!

However, we may eaſily diſtinguiſh, that part of their practice, where theory took place; and have not they ſaid enough to evince that applications which are emollient, cooling, and lie eaſy upon the part, are ſafe and uſeful? We might have collected a multiplicity of facts from other writers to the ſame purpoſe, but theſe ſpecimens are ſufficient: and, if the theory they were fettered with, appears from the account we have given, to have ariſen in imagination only; it will be evident, that abundance of uſeleſs cautions and bad practice have unneceſſarily been the conſequence.

Seeing

Seeing people ſweat in the very parts where mercurial ointment was daily rubbed in, to bring on a ſalivation; its uſe in a dropſy, its being ſo very readily abſorbed in wounds, and when rubbed upon the body; that gouty feet ſweat often, which are wrapped up in jerſey in the oil; all theſe inſtances induced me to believe, that oil did not ſtop up the pores. But to put the matter beyond doubt, I perſuaded a perſon to have one of his feet rubbed with oil ſeveral evenings together, and one evening it was wrapped up in an oil-caſe, ſurrounded with flannel, at going to bed. In the morning we were convinced, from the collected ſweat, that all the doctrine about oil ſtopping up the pores, unleſs when uſed ſo as to over relax the fibres, was groundleſs and void of truth.

For my own part, I have for more than thirty years, conſtantly uſed cooling emollient applications in this diſeaſe; nor have I any reaſon to alter my practice: for I

am induced to believe the opinion that they abate pain, and leſſen irritability by removing tenſion; and that ſome of their oily parts being abſorbed, defend the nerves, more or leſs, againſt irritating matter. If oily or emollient applications are ſo prejudicial in an eryſipelas, how comes it to paſs that they are ſo beneficial in other inflammations, which require exactly the ſame kind of treatment? I have met with ſeveral ſurgeons of experience, who uſe unctuous and emollient dreſſings in this complaint without reſerve; I am perſuaded the outcry againſt them originated in groundleſs theory, and that the apprehenſions of ſuch kind of topical remedies being injurious, can only poſſeſs the minds of thoſe who have not examined the ſubject, or are wanting in experience. But I ſhall now lay down a regular method of cure, beginning with a local eryſipelas.

CHAP.

CHAP. VI.

OF A LOCAL ERYSIPELAS.

THIS diſorder may ariſe from external accidents, a compleat metaſtaſis of acrid matter, or from epidemical *miaſmata* affecting the membranes. Some perſons are more liable to this diſeaſe than others, and give reaſon to imagine that every eryſipelas ariſing from an external cauſe, is not local; but that a diſpoſition in the habit previous to the application of a bliſter, for inſtance, is the cauſe of that diſeaſe ſometimes attending the uſe of this remedy. On the other hand, it does not follow that a *materia morbi* has lain dormant in the habit, and ſhews itſelf upon the action of this exciting cauſe; as a greater degree of irritability than ordinary will occaſion theſe ſymptoms, and the diſeaſe may nevertheleſs be perfectly local. However, if any doubt ariſes, it may be treated in the manner hereafter directed

Localery-ſipelas how to be treated.

for the general eryſipelas; and we lay it down as an invariable rule, that whether this diſeaſe when ſeated in the head is local or not, always to attempt the cure by promoting a diſcharge outwardly: becauſe the veſſels belonging to the membranes on the outſide of the ſkull, having an immediate communication with the membranes on the inſide, obſtruction, and its conſequences, may readily be communicated from one to the other; whether from the outſide veſſels being over-loaded by the diſeaſe, or whether it is repelled by improper applications.

A man received a ſmall wound upon his head, which injured and laid the pericranium bare; but digeſtion came on in a proper time, and a cure was haſtening forward, when he careleſsly at work expoſed his head to a north-eaſt wind for ſeveral hours together, without even covering the plaiſter with his hat. Upon this the ulcer became dry, an eryſipelas began to appear, and in a ſhort time became

came as truly formidable as any eryſipelas I had ever ſeen; for the whole head was enlarged to an enormous ſize, ſmall bliſters began to ariſe, and the patient had a ſmart fever, with a delirium. I knew the whole of this miſchief aroſe from the pericranium being obſtructed, and inflamed by the cold air; and ſeeing that an eryſipelas is never the conſequence of large wounds in the membranes where there is a free diſcharge, I enlarged the wound, which I dreſſed with digeſtives, and applied a neutralized cerate to the whole head. Blood was taken from the arm, and Glauber's ſalt given inwardly; by which means an exudation aroſe under the application, the wound digeſted, and as the diſcharge increaſed, the fever and delirium leſſened, and were ſoon entirely removed by theſe evacuations. Now in this inſtance, the dangerous ſymptoms manifeſtly aroſe from accumulated lymph; and I have in the courſe of my practice ſeen many inſtances of the ſame kind, which were always

cured

cured by bringing on a diſcharge from the part.

Local eryſipelata of the extremities, how to be treated.

Local *eryſipelata* of the extremities when ſlight, require not any treatment different from that deſcribed in the method of cure in a ſimple inflammation of the ſkin. By applying remedies, which render the nerves inſenſible to irritation, we frequently have it in our power to ſuppreſs inflammation; and this practice often prevents much miſchief in the beginning of the diſeaſe of which we are now treating. And though the inflammation ſhould have made conſiderable progreſs, yet before great obſtruction has taken place, we have ſeveral times ſeen, when ſeated in the extremities, the Arabian method of applying linen cloths, wet in cold water, and renewed as often as they become warm, entirely remove the diſeaſe by extinguiſhing preternatural heat, and perhaps by preventing an increaſe of irritability in the part. The cold juices probably produced the ſame effects, and they frequently muſt

have been ſucceſsful, otherwiſe they could not have ſtood their ground full thirteen hundred years. It is in this inſtance where the preparations of lead, either in cataplaſms, or in ointments, as the caſe may require, do good ſervice by their ſedative quality. I have more than once ſeen the common remedy of ſpirit of wine and ointment of elder, cure an eryſipelas in the face, ariſing from a blaſt of air, in a few hours. Spirit of wine, no doubt, is a powerful ſedative; but what we have ſaid about repellents, takes place in this inſtance, and I would never apply it unleſs the diſeaſe was ſlight, and I was certain it was local: but it is obvious none of theſe remedies can be uſed with advantage while external ſtimuli interfere. And where the veſſels of the part are much loaded, deobſtruents, and thoſe applications which make a diſcharge, ſhould take place; otherwiſe the juices accumulating may extend themſelves to the membranes beneath, and occaſion ill conſequences.

Repellents to be avoided.

A woman

A woman had an eryſipelas on the ſide of her face, which began about the ear, and extended itſelf upward, covering part of the temporal muſcle, and that part of the forehead. Drying applications had been uſed, and a diſſolution of the membranes underneath was the conſequence. Many ſinuſes were formed adjoining to the bone, and ſeveral openings, which by proper treatment, might have been avoided, were neceſſary to accompliſh a cure: but the manner of preventing ſuch accidents will be underſtood from what will be ſaid of critical *eryſipelata*. As to internal treatment, both bleeding and purging, if neceſſary, may take place with advantage; as we have nothing to fear from morbid matter re-entering the blood. Nor is there any thing which ſo powerfully renders the whole ſtate of the veſſels pervious, as ſaline purges: which together with the external treatment already mentioned, will in general be ſufficient for the purpoſe.

CHAP.

CHAP. VII.

OF CRITICAL ERYSIPELATA.

EVERY critical eryſipelas is an eruptive fever, that like the ſmall-pox paſſes through different *ſtadia*; is ſeven or eight days, more or leſs, after breaking out, in coming to a criſis; and then after the ſcales or incruſtations drop off, it gradually diſappears: but differs from moſt other fevers of this claſs, the patient being liable to a return of the ſame diſeaſe.

Eryſipelata of this kind differ according to the degree of acrimony and quantity of the matter expelled. If the quantity is ſmall and not very acrid, the ſubſequent inflammation will be mild, the ſkin only being tinctured with the diſeaſe. When greater, the citron-colour is ſtronger; and when the diſeaſe is conſiderable, matter is diſcharged, which occaſions a roughneſs

upon the ſkin, or little ſcabs reſembling bran. When ſtill more inveterate, the ſkin is *dilated* and *thickened*, an ichor is diſcharged, which by irritating, invites a flux of humours from all the neighbouring parts, and forms ſcabs and bliſters that terminate in ſuperficial ulcers; and in exceſs of acrimony, the ſkin is mortified and diſſolved, unleſs prevented by art.

How to be treated.

Now wherever matter is expelled from the habit, it is the buſineſs of the aſſiſtant to finiſh the work which nature has begun; and for this purpoſe we ſhould ſolicit a diſcharge by the ſkin. If the inflammation is ſlight, and gives little or no diſturbance, topics may not be neceſſary; as the offending matter may itſelf tranſpire. Where it is great, the accumulation of acrid lymph may be attended with the moſt untoward conſequences, by diſſolving the parts it immediately affects; and topical remedies ſhould be applied capable of promoting a diſcharge. For this purpoſe

poſe a neutralized ointment will often be found effectual; but when great inflammation requires great relaxation, a neutralized emollient cataplaſm is preferable.

We do not always put the ſame proportion of neutral ſalt into the ſame quantity of ointment or cataplaſm; different degrees of irritability requiring different degrees of ſtrength in the compoſition, in the ſame manner as we vary purges in different conſtitutions. This can only be learned by attending carefully to the different appearances of inflamed parts, under different degrees of irritability; to the general aſpect of the patient, to the ſtructure of the ſkin in different people, and to the effects which topics may at any time have produced. Sedatives are often advantageouſly joined; Glauber's ſalt and the vinegar of lead united in a poultice, frequently mitigate the effects of each other, leſſen irritability, and remove obſtruction at the ſame time. But as ſoon

as

as a proper diſcharge has been made, ſtimulants are no longer neceſſary, and any mild ointment will finiſh the cure.

Much depends, however, upon the manner of making poultices; for if they are left to the care of people unacquainted with this buſineſs, as frequently happens, they commonly turn out very bad applications, by becoming dry and inflaming, inſtead of removing inflammation from the part. A cataplaſm can never be a good one, without long boiling, which gives it a proper conſiſtence, whence it is lies eaſy without hardening *upon the part.* Four ounces of white bread ſliced, one quart of milk, and an ounce of hog's-lard, boiled ſlowly together, till the poultice acquires ſuch a conſiſtence, that it will not ſtick to the hand; will anſwer every end, that can be expected from an emollient application. But poultices are very inconvenient remedies when the diſeaſe is ſeated in the head, or face; wherefore we here

here prefer the other applications recommended, when the diſeaſe has riſen ſo high as to make topics neceſſary.

In regard to bleeding, I agree with Hoffman *, that we may occaſion a retroceſſion of the offending matter, or prohibit its expulſion; unleſs in plethoric and robuſt conſtitutions, where it is ſometimes uſeful by increaſing the action of the veſſels and giving room for the matter to paſs off. Where the diſeaſe does not riſe very high, I juſt keep the bowels open by ſaline purges, and ſuffer it to be diſcharged under the applications adviſed; which, if I can judge from my own experience, will always happen when the criſis is complete. This may be known by the rigor and fever terminating when the inflammation comes on; and though a ſubſequent ſymptomatic fever ſhould afterwards appear, it will readily be diſtinguiſhed by comparing it with the fever

* Praxis Clin. Inflam. de Eryſipelacea.

which uſually accompanies local inflammation.

If the quantity of matter to be diſcharged from the blood is very great, and the topics do not keep the veſſels ſufficiently unloaded, I commonly give ſaline medicines, that will either paſs off by ſweat or urine: on thoſe days we do not open the bowels, nor do I ever remember an eryſipelas end otherwiſe than well, under this treatment, when ſeated in the extremities. But when the flux of humours falls upon the head, more active proceedings are ſometimes neceſſary, to prevent a ſuppuration of the membranes covering the brain. Therefore the doctrine we have maintained, about a local eryſipelas of the head, holds good in this inſtance; for though critical eryſipelata often require ſeven or eight days before they begin to terminate, and will not by any means be removed before that period; yet, if we ſuffer the veſſels of the ſkin to be over-

Critical eryſipelata of the head.

loaded,

loaded, the patient may be deſtroyed before the diſeaſe has ſpent itſelf. This I am pretty clear I once ſaw happen, in conſequence of the doctrine that topics were improper, in a man where the diſeaſe, after increaſing ſix or ſeven days, had ſwelled his whole head to a prodigious ſize indeed, and his face was almoſt covered with incruſted lymph. His fever bore no proportion to the ſwelling; he was ſtupid and inſenſible when I firſt ſaw him, and death prevented an opportunity of giving him relief. The danger may be eſtimated by a delirium accompanying very great ſwelling; and the veſſels ſhould be unloaded as quickly as poſſible, by every means in our power. Beſide applications which promote a diſcharge, bleeding, if the ſtrength of the patient will permit, and larger doſes of purging neutral ſalts ſhould take place, to make an immediate derivation from the head.

Bliſters to the back, do good ſervice in this inſtance, but upon the head or behind the ears, I think, they ſhould be applied with caution; becauſe, for a time, they increaſe local inflammation when laid very near it, and where it is already great, they may aggravate the diſeaſe in ſo important a part to the deſtruction of the patient, before the diſcharge they occaſion can poſſibly do any good. Dr. Freind * ſays, "experience has convinced me, that when "the head is affected with an eryſipelas, "and there comes on a *coma*, a delirium, "or convulſions, wherein the brain is evi- "dently attacked, the only hope is from "purging." And there cannot be any doubt, if bliſters and topical purging do not ſpeedily remove the diſeaſe, internal medicines moſt capable of rendering the veſſels pervious ſhould be given; for it is better to hazard the chance of carrying the *materia morbi* off by the bowels, than

* De Feb. Com. iv. 285. fol. edit.

ſuffer

ſuffer it to remain upon a part where it will moſt likely kill the patient. I have ſeen the practice of this learned phyſician ſucceſsful, where *coma* and delirium aroſe in this diſeaſe in ſtrong habits. Betwixt the days of purging I commonly give ſaline deobſtruents; and the feet may be put in warm water. But ſeeing how effectually the diſcharge from a wound in a local eryſipelas of the head, accompliſhes a cure, may not making a proper wound through the pericranium, and haſtening digeſtion, be an adviſeable practice in this inſtance, in caſes of exigency, where bliſters laid upon the back, and purging, which make a powerful derivation from the head, fail in giving ſpeedy relief?

This is the treatment which I have found ſucceſsful, when the eryſipelatous matter is thrown off with vigour; but it ſometimes happens that nature is incapable of expelling the diſeaſe properly: the inflammation, perhaps only juſt ſhews itſelf, and a

When the criſis is incomplete.

fever, ſometimes with delirium, evinces that the criſis is incomplete; under which circumſtances different ſteps muſt be taken.

After clearing the *primæ viæ* with a clyſter, with infuſion of ſena and manna, or any gentle purge, nature ſhould be aſſiſted by warmer medicines, in determining the *materia morbi* to the ſkin; and for this purpoſe I have given the *pulvis contrayervæ*, crude *ſal ammon.* and Mindererus's ſpirit joined, with wine-whey betwixt the doſes. The active preparations of antimony ſometimes do ſervice; bliſters are often very uſeful; and in great lowneſs, mountain or Madeira wine is beneficial. The matter forming a common abſceſs in the groin of a gentleman of relaxed fibres and weak conſtitution, was abſorbed in one night's time; and, except wearing a ſoft mild plaiſter upon the part, no farther notice, by his own deſire, was then taken; but in about three weeks or a month's time he was ſeized with a moſt violent

violent rigor, ſucceeded by a high fever; and a very ſlight eryſipelas ſhewed itſelf upon the lower part of the abdomen, near to the place where the tumor firſt appeared.

An antimonial fever-powder was given, which procured ſeveral ſtools, and brought on a gentle ſweat. A bliſter was applied to the inflamed part, which increaſed the eryſipelas greatly. His pulſe forbid great evacuation. The ſudorifics juſt mentioned were preſcribed, under which treatment he ſoon recovered. Sometimes I have applied ſinapiſms to the inflamed part, which have had a deſirable effect; but whenever nature ſhews this embarraſſment in her work, no time ſhould be loſt; for the eryſipelatous matter will frequently recede in a few hours, and every attempt may be incapable of relieving the patient. Toward the end of the diſeaſe, the bark, either alone or joined with ſnake-root, may be advantageouſly given, if the patient's

ſtrength requires ſuch aſſiſtances. This kind of eryſipelas, or rather eryſipelatous fever, is ſometimes epidemical, ſeizing thoſe of weakened relaxed habits: perhaps the eryſipelas Mr. Bromfield * ſpeaks of, was of this ſpecies, where, for the moſt part, the patient died under bleeding, purging, and cooling medicines; while thoſe ſupported by cordials and the bark, applying bliſters as they became neceſſary, and keeping the bowels open with clyſters, moſtly recovered.

Some people are ſubject to frequent returns of an eryſipelas, owing moſtly, I believe, to the abſorption of crude matter, which ought to have been diſcharged at the place pointed out by nature; becauſe I have ſeveral times ſeen it happen where I could trace it from the time matter in an abſceſs and eryſipelata had diſappeared without any ſenſible exudation or diſcharge. And notwithſtanding every ery-

* Chirurg. Obſ. p. 108. vol. i.

ſipelas

ſipelas which afterward appears, is an effort of nature to diſcharge the offending matter; yet not getting through the extremities of the veſſels, it in a great meaſure returns into the habit, and lays the ſeeds of a future inflammation.

I have frequently tried purges, and the purging waters, in this inſtance, without any other effect than prolonging the intervals of inflammation; nor have I ſeen any better ſucceſs from a long courſe of alteratives and deobſtruents: ſo difficult is it to eradicate particular kinds of matter by medicines, when it has tainted the habit. But if a diſcharge is procured from the part, whenever the inflammation comes on, and the running is continued by the application of proper remedies as long as poſſible, the matter expelled will be prevented from returning into the ſyſtem, and more eaſe enſue, provided the patient lives upon a light cooling diet, and avoids every kind of food which is fat or greaſy: for

for fat or oily things increaſe this diſeaſe, as Guido de Gauliaco long ſince obſerved, and as experience has ever ſince taught.

Hitherto we have chiefly conſidered eryſipelata as affecting a particular part only, though we have already ſhewn that this diſeaſe ſometimes, more or leſs, invades all the membranes in the body. We ſhall now more fully treat of that matter, beginning with the eryſipelas which approaches neareſt to a common inflammation. It is attended with eryſipelatous efflorescences; but as the diſeaſe I allude to, has not been repreſented in this light, I will deſcribe a caſe which lately fell under my care; and recollection will preſent to the minds of thoſe converſant in buſineſs, a variety of inſtances, which muſt have happened under their own obſervation; as different degrees of this complaint are far from being uncommon.

A woman, about forty-five years of age, was ſeized with a fever, for which ſhe was twice

twice bled; and ſome medicines had been given before I ſaw her. In about ſix days from the ſeizure, an eryſipelatous efflorescence appeared upon her legs, arms, and breaſt; her throat was inflamed, and ſore; ſhe had a violent cough, with a difficulty of breathing; and complained of pain in making water. Her pulſe was rather weak, beat about a hundred and twenty ſtrokes in a minute, and ſhe was a ſtranger to reſt. Conſidering this caſe to be an inflammation of the membranes, I purſued the antiphlogiſtic plan; but did not direct the loſs of more blood, becauſe her pulſe, I apprehended, would not bear it. Calomel was given, worked off with Glauber's ſalt, and infuſion of ſena; and ſhe took an anodyne ſaline draught every night. Some oil and ſyrups were given, now and then, in hopes of eaſing her cough, by leſſening irritability; an emollient ointment was applied to the inflamed parts which were painful; ſhe had three,

three, four, or five ſtools every day, procured by a mixture of infuſion of ſena, regenerated tartar, and manna; and ſhe drank diluting liquors. By this method ſhe began to ſpit freely, her difficulty of breathing diminiſhed, her cough ceaſed, and, in about a week, every ſymptom of inflammation diſappeared. She now ſpat inſpiſſated lymph reſembling matter, and ſome light cooling bitters finiſhed the cure. Nor did I purſue ſlow and continued purging without experience, having repeatedly found it ſucceſsful in ſimilar complaints.

A young man, after riding in an open carriage two exceeding cold froſty days, was ſeized with a ſwelling about his throat and face; a fever came on, the membranes on the inſide of his throat were inflamed, they had an eryſipelatous appearance, and in a few days more, an eryſipelatous efflorescence preſented itſelf all over the body. His pulſe at one hundred and twenty was rather full, and his lungs

ſeemed to be loaded. He was ſtrong and vigorous, and the diſeaſe appearing to be a *ſimple inflammation* of the membranes only, from taking cold, I treated it on the antiphlogiſtic plan. He was bled once, and purged occaſionally; on the intermediate days other cooling remedies were given, and emollient gargariſms were daily uſed; under which treatment he ſpat up fœtid matter from his lungs and throat, and ſpeedily recovered.

On Eryſipelata occaſioned by contagious Miaſmata.

MIASMATA occaſioning an eryſipelas, ſeize upon thoſe membranes moſt expoſed to their effects, and therefore the membranes lining the throat and ſtomach, are the parts on which the diſeaſe firſt ſhews itſelf. This in the beginning is local, as is evident from an immediate ſtop being ſometimes put to the complaint, by waſh-

Eryſipelas of the *primæ viæ.*

waſhing off the *materia morbi* in the operation of a vomit. But if this ſtep is neglected at the very onſet, while the *miaſmata* lodging upon the *mucus*, natural to theſe parts, may be readily waſhed off, they lay hold of, and inflame more deeply, the membranes which line the *fauces*, &c. and from thence all the *mucous* membranes in the body. Becauſe, not only the membranes lining the noſe, ears, urethra, and vagina, become affected; but the efflorescence we have ſpoken of, appears in the ſkin, and ſhews that the other parts of the body are equally affected. Wherefore this is not a criſis, as ſome have imagined, but the characteriſtic of an inflamed membrane, and a ſymptom of the greatneſs of the diſeaſe.

Now different kinds of *miaſmata* produce different effects, and muſt be treated accordingly; reflecting on the variety that may again ariſe from the ſeaſon of the year, with the ſituation and habit of the patient. But in every inſtance, *corroſive* matter

matter will inflame the membranes it happens to ſeize on. In conſequence, if not prevented, they, like membranes affected with inflammation in other parts of the body, will putrify and ſeparate in rags; ulcers will be formed, and extend themſelves, by the acrid matter they produce, inviting by irritation a flux of humors to the parts; and the whole body will be contaminated by matter abſorbed.

In what manner to be treated.

Hence it follows, that inflammations of the membranes in the *primæ viæ* ſhould be treated with the ſame intentions as an external inflammation under the ſame predicament; for we ſhould immediately attempt to remove from the parts affected, the *ſtimulus* or *materia morbi*. If we fail of ſucceſs, we ſhould, if poſſible, ſubdue the inflammation that takes place by diſcuſſion; but if putrefaction unavoidably comes on, we are to correct the acrid matter, and diſcharge it occaſionally, to prevent its being with force abſorbed into the

habit. Such other internal medicines, ſhould at the ſame time be given, as are capable of ſupporting the patient's ſtrength, and of correcting its virulency when got into the blood; becauſe all malignant matter leſſens or deſtroys nervous energy.

In the latter end of the year 1779, an epidemic eryſipelas prevailed in this place, and neighbourhood, beginning in the fauces and throat, and extending itſelf over the whole body; called the ſcarlet fever, or *ſcarlatina anginora* as deſcribed by Dr. Withering, of Birmingham. The inflammation in the throat was of the eryſipelatous kind, but approached nearer to the *angina inflammatoria* than commonly happens. I never ſaw a diſeaſe ſo ſuddenly fatal if neglected, or ſo readily cured if taken in time. The two perſons firſt ſeized in this town were a brother and ſiſter, the one ſeventeen, and the other about twenty years of age; ſickneſs, vomiting, and looſeneſs came on, but ſo far from

from being violent; that the family imagined theſe ſymptoms would of themſelves ſoon diſappear, and therefore neglected to call in timely advice. Nor did they complain of their throats, otherwiſe than that they ſeemed rather raw; but they had great weight at the precordia, great dejection of ſpirits, a ſlight delirium, their eyes had a ferret-like appearance, their pulſe was exceeding quick and very feeble, and they both died in about eight and forty hours from their firſt ſeizure, with all the ſymptoms of nervous power being deſtroyed. We obtained leave to open the boy, and, to our great ſurpriſe, found not the leaſt veſtige of ſo violent a diſeaſe: the whole viſcera were perfectly ſound, free from any ſigns of inflammation; the inſide of the ſtomach was not in the leaſt eroded, but the gall-bladder, and its ducts, were loaded with bile, which might probably ariſe from that irritation with which the

viſcera in the abdomen were manifeſtly affected. The vomiting and purging probably aroſe from this cauſe; and as neither inflammation nor putridity appeared, the ſudden death, and the ſymptoms attending it, ſeemed to be owing to the contagious *miaſmata* being powerfully ſedative, and that it had alone deſtroyed theſe two people by extending its deadly influence from the nerves of the *primæ viæ* to the whole nervous ſyſtem. Nor are an irritating and a ſedative power in the ſame ſubſtance incompatible, as many are known to have both theſe properties.

In the firſt patient I preſcribed for in this caſe, the affection at her ſtomach ſeemed to indicate a vomit; ſhe complained of an acidity upon it, and had not had a ſtool that day; wherefore I gave a quarter of a grain of emetic tartar, ten grains of magneſia, and the ſame quantity of rhubarb in powder, to be repeated according

cording to its operation: but two doſes procured ſufficient evacuation, and the patient was quite well the next day. After this, I found that vomiting and purging, almoſt conſtantly, if properly purſued, put an end to the diſorder; and in ſome inſtances purging with calomel and ſalts, or, in the very beginning, with ſalts alone, were quite ſufficient to prevent farther miſchief. So effectual was any remedy that cleared the firſt paſſages of the materia morbi, that a young fellow was cured by large draughts of gruel. He was butler in a gentleman's family, betwixt twenty and thirty years of age, and, along with a ſore throat, was ſeized with a purging, vomiting, pain at the præcordia, and ſuch a violent depreſſion of ſpirits, that the family was apprehenſive he was in great danger; but having ſeen the effects of vomiting and purging, among the other ſervants, they determined (that no time might be loſt,

being at ſome diſtance) to encourage them by very large and frequent draughts of water-gruel, which had the deſired effect; for it paſſed both ways very freely, and next day he was well. Nor is the death of thoſe, where a purging ſpontaneouſly ſupervenes, any objection to carrying the diſeaſe off in part by the bowels; for we are to remember, that thoſe who lived, bore much greater evacuation downward than thoſe who died; becauſe in the latter the materia morbi, though it purged and vomited, did not carry itſelf off, but, accumulating, killed the patient by its ſedative property acting upon the nerves: whereas both vomits and purges prevented this cataſtrophe by removing the offending cauſe. Whether this reaſon for the different effects of ſpontaneous and artificial purging be true or falſe, we can with truth aver, that vomits never anſwered perfectly well without they alſo purged; and that we have ſeen many in

which the diſeaſe was nipped in the bud, and cured by purging alone. Nevertheleſs, we did not neglect applications to the throat; for notwithſtanding this was only attacking a part of the diſeaſe, yet, as it gave the patients relief, and made them ſwallow with more eaſe, it was a circumſtance worth attending to. The remedy we had recourſe to on this occaſion in the beginning, was a very common one, compoſed of equal parts of ſugar and nitre, which penetrates into the inflamed parts, ſtimulates them to diſcharge their contents, and by unloading, mitigates this part of the diſeaſe. A ſcruple of this powder, ſuffered to diſſolve in the throat about every two or three hours, brought on a free evacuation of ſaliva and phlegm; the mouth and fauces were waſhed with barley-water after it was diſſolved, and had brought on a ſpitting: nor were we ſcrupulous of uſing it, becauſe it is in the hands of every old wo-

man; for after forty years experience, I do not know any other remedy ſo certain and effectual in promoting a diſcharge, and thereby removing inflammation in the throat: nor did it often fail in the preſent inſtance, by repeating it two or three times a day, to do more or leſs ſervice; and frequently, I think, where the diſorder was not carried off in the very beginning, prevented a ſeparation of ſome parts of the membranes, *in the throat*, taking place.

However, where evacuations were not at all, or but imperfectly made in the beginning, and the diſorder, owing to conſtitution, did not kill the patient in a day or two, all or moſt of the membranes in the body became inflamed; as was evident from the efflorescence coming on, and from the noſtrils, ears, and ſome other natural paſſages being affected; attended with a fever, in which the ſkin was very hot, and the pulſe ſeldom leſs than one

hundred and thirty ſtrokes in a minute, often more: even under theſe circumſtances emetic tartar, by clearing the primæ viæ, frequently removed all the ſymptoms, and fairly evinced the connection between this and the other parts of the body.

But the membrane lining the alimentary canal by this time, in ſome places, became dead white and ſeparated, and an ichor, like the ichor from an ulcerated eryſipelas in the face, was diſcharged upon the neighbouring parts; which no doubt proved a *fomes morbi*, by irritating the inteſtinal canal. It was evident from the excoriation which ſometimes appeared about the anus, that the whole of this tube was more or leſs affected with the diſeaſe; and if a vomit or two did not relieve the patient, we had recourſe to thoſe means which were likely to correct the ichor lodged in the bowels, to defend the parts againſt its acrimony, and to carry it

off occaſionally, with ſafety to the patient.

For theſe purpoſes we had the ulcers in the throat touched two or three times a day with a mixture of honey of roſes, and ſpirit of ſalt, and now and then waſhed them with tincture of roſes, or Port wine and water, or the like; or ſometimes, where the mouth and throat felt very ſore and raw, we adviſed the patient to ſwallow gradually a kind of linctus made of conſerve of mawl flowers, honey of roſes, and Armenian bole. But we carefully avoided ſyringing, as a method capable of doing the greateſt injury. I firſt took the hint from the bad ſucceſs of a ſurgeon in the cure of ſore throats, who was fond of this practice. Indeed, he frequently, I am convinced, loſt his patients by attempting to ſubdue the diſeaſe by ſtorm; and in one inſtance I knew he brought on a mortification in a common *angina inflammatoria*, by irritating the part

Syringing injurious.

part with the ſtream from the pipe. A warm fomentation of milk will frequently relieve inflamed eyes; but if the ſame application was impelled into the eye with force from the ſyringe, there is not any doubt but it would increaſe the diſeaſe. It is juſt the ſame in inflammations of the tonſils, &c. for the nerves are equally expoſed, and ſuſceptible of equal impreſſion; and unleſs they happen to be defended with dead ſloughs, whatever may be the nature of the injection, it will moſt likely do harm. Nor is ſyringing neceſſary, as gargariſms, fumigations, or touching the part with lint fixed upon the end of a ſtrong probe, and dipped in a proper mixture, will anſwer every end that is required.

In hopes of correcting acrid matter, and defending the excoriated parts againſt its effects, well made gruel, with ſpirit of ſalt in it, ſpirit of nitre and water, or whey made of milk, water, and juice of lemon,

lemon, were drank occaſionally; and where medicines, to ſupport the nervous ſyſtem, ſeemed neceſſary, the pulvis contrayervæ was given. Spermaceti, or wax and ſpirit of ſalt, were given in the bark decoction, *after* the dead pieces of membranes began to ſeparate; for though we no ways looked upon this diſorder to be putrid, unleſs every kind of ichor may be ſaid to be putrid, yet we gave this medicine to ſupport the ſtrength of the patient. For this purpoſe wine and water were allowed, and toward the end of the cure, wine alone. Where the heat forbad the uſe of the bark, ſtarch and chamomile flowers in powder, or ſtarch and the pulvis contrayervæ, in a draught compoſed of ſpirit of nitre and water, ſeemed to anſwer a good end in keeping the diarrhœa within bounds; probably by mixing with and leſſening the power of the irritating matter, and in defending the nerves of the firſt paſſages againſt irritation.

Spirit

Spirit of nitre and water, or toaſt and water, to which wine was occaſionally added, were commonly drank cold; the patient was kept cool, and above all, the bowels were opened once or twice a day, with a mixture compoſed of infuſion of ſenna, manna, and ſpirit of vitriol; ſuppoſing colluvies of any kind lodging in the bowels muſt unavoidably be prejudicial. Under this treatment the efflorescence died, the ſkin became ſcaly and rough, a ſwelling of the wriſts and ancles reſembling a rheumatiſm (the forerunner of a recovery) came on, and upon theſe ſubſiding, the patient was commonly reſtored to health. Seeing the manner in which the miaſmata deſtroyed patients in the firſt inſtance, and in two more ſimilar inſtances, we were cautious in the uſe of opium; and yet, when the diſorder was advanced, reſtleſſneſs ſeemed to require it. Wherefore we ſometimes gave three or four drops of laudanum about every eight or

ten

ten hours, in ſome of the medicines deſcribed: and we think without inconvenience, owing perhaps to the ſtimulus the inflammation kept up through the whole nervous ſyſtem. However, it was hard to ſay whether the patient received any benefit from it or not, becauſe our general plan was at the ſame time purſued, which we had reaſon to think was right; for out of more than two hundred thus treated, none died.

Sometimes, when the patient was not deſtroyed in the beginning, and nothing was done, the diſeaſe was protracted to a great length. I was called to ſeveral who had been ill three weeks or a month; they were greatly emaciated, had an aphthæ, a continued fever, with ſcarlet lips, and an exceeding quick weak pulſe. Even in theſe caſes we began the cure with ſmall doſes of calomel and rhubarb, and repeated them occaſionally. Nor had we reaſon to repent of our proceedings, for

for they not only carried off offending matter, but ſeemingly made way for the uſe of the bark, ſpirit of ſalt, &c. and the patient often recovered while he was taking theſe medicines. We never met with a pulſe that indicated bleeding, or had recourſe to bliſters; becauſe they appeared to be no ways neceſſary or likely to be uſeful. Nor did we ever want any other remedies than thoſe deſcribed, except that we ſometimes laid ſweating plaiſters upon the throat at the beginning: and in an advanced ſtage of the complaint this application was ſometimes neceſſary, from the glands ſwelling externally below the ears; and I ſuppoſe it did ſervice, becauſe the ſwelling ſubſided when it was timely applied; whereas in one inſtance, where nothing was done, I juſt came ſoon enough to ſee the boy dying of ſuffocation from a ſwelling of his face and throat. I ſaw ſome children where no evacution had been made, and the diſorder

terminated

terminated in a month or five weeks in an anaſarca, attended with bleeding at the noſe and mouth, and bloody fœtid ſtools, ſeemingly from nervous energy being gradually leſſened. But I had very little opportunity of aſcertaining a method of cure by experience, two out of three patients I viſited, all in the ſame houſe, dying before they could take medicines ſufficient to do any ſervice; and the other recovered, after clearing the bowels with gentle antiſeptic purges, and taking the bark and elixir of vitriol.

Putrid eryſipelas.

Experience, however, has taught that *miaſmata* producing internal *eryſipelata* are ſometimes ſeptic; yet, like thoſe we have been ſpeaking of, they ought no doubt to be removed in the ſame manner from the parts they firſt affect, to prevent putrefaction and its conſequences: and there is every reaſon to believe, that the putrid ſore throat, as it is called, has made greater havock than it would otherwiſe have

have done, for want of attention being paid to this particular. If putrid matter lodging upon the ſkin was to bring on inflammation, ſhould we not attempt to prevent its making progreſs by waſhing it off? Why are not the ſame ſteps to be taken when putrid *miaſmata* ſeize upon the membranes lining the fauces, &c.? And what reaſon have we to ſuſpect, that the ſame treatment would not prevent the ill effects of putrid *miaſmata*, as of a poiſon, ſeemingly from its ſudden and deadly effects of the moſt deleterious kind?

Indeed, I am fearful the word *putrid* has done much miſchief in this complaint, by leading ſome practitioners to a more early uſe of bark and myrrh gargariſm than was conſiſtent with the true intentions of cure: for theſe remedies in the beginning would increaſe the inflammation; nor would their antiſeptic virtues, perhaps, be able to counterbalance the evils thus brought

brought on. Unloading the inflamed veſſels in the throat by nitre, muſt tend at leaſt to prevent an increaſe of inflammation in this part; and if vomiting and purging, with the aſſiſtance of gruel, do not waſh off the diſeaſe, antiſeptics, if they are neceſſary, ſhould be given; but they ſhould be of the cooling kind, ſuch as ſpirit of nitre, or ſpirit of ſalt, &c. till a certain degree of debility coming on, the ſloughs in the throat, if any are formed, begin to ſeparate, and then the bark may take place. But I think, with Dr. William Fordyce, that it is rendered more powerful by joining with it ſpirit of ſalt. I have long been acquainted with the powerful effects of this antiſeptic, and have given it in much larger doſes than that gentleman preſcribes; having found, by proceeding gradually, that a drachm, or a drachm and a half, may be taken in the ſpace of twenty-four hours, with ſafety and advantage. An emulſion

emulſion made of bark decoction, ſpermaceti, and mucilage of gum arabic, is a convenient vehicle to give it in; and we thus attempt to correct putrid acrimony, and to defend the nerves of the inteſtines at the ſame time. Some are great advocates for the uſe of fixed air in putrid diſeaſes, and there is not any doubt of its having a moſt powerful antiſeptic property, being probably the univerſal acid ſo long known. But on the other hand, its ſedative powers are equally great, and whether there is no objection to its uſe in theſe inſtances, experience only can determine.

The ulcers may be touched with the ſpirit of ſalt and honey of roſes, before deſcribed, and waſhed with the gargariſms then mentioned; and in caſes of great putrefaction, tincture of myrrh and tincture of roſes may be joined. It is not uncommon, though the diſeaſe is of a putrid nature, for ſymptoms, ſomewhat

reſembling an *angina inflammatoria*, to appear at the onſet; but theſe are of ſhort continuance, and may be diſtinguiſhed from inflammation unaccompanied with putridity; for the *angina inflammatoria* takes its riſe within the gland, and the affection is confined to the noſtrils, which are prominent and vigorous; whereas in the *angina maligna* there is leſs vigour in them, and the neighbouring membranes being firſt affected by an external cauſe, an eryſipelas, in a greater or leſs degree, ſpreads itſelf over the fauces and throat. There is beſides commonly a weight and uneaſineſs at the præcordia, with dejection of ſpirits from the effects the *miaſmata* have upon the nerves of the ſtomach; all which are ſufficient to put us upon our guard in the treatment of the patient. The other ſymptoms have been ſo often deſcribed by different writers, that it would be taking up too much of the reader's time to recite them; and indeed,

deed, when the cauſe and ſeat of a diſeaſe is known, the cure, if it can be accomp'iſhed, readily follows. The bowels ſhould be occaſionally cleared of the ichor, conſtantly draining into them, by tamarinds and rhubarb, or ſome other gentle antiſeptic purge; but if, notwithſtanding, it ſhould occaſion a diarrhea by irritating the nerves of the inteſtines, the number of ſtools may be leſſened and brought into proper bounds by the powder compoſed of ſtarch and chamomile flowers, without any danger of confining matter which ought to be diſcharged. If cordials become neceſſary to ſupport the patient's ſtrength, I know of none better than wine.

Beſides theſe, I have met with another kind of epidemic eryſipelas in the throat, but no ways dangerous: the fauces, *velum palati*, &c. have an eryſipelatous appearance, and the latter is puffy. It frequently diſappeared without any aſſiſtance, otherwiſe a doſe or two of cooling phyſic,

and a common gargariſm put an end to the complaint. Hence it is evident, that whatever irritates the membranes, may bring on this diſeaſe, attended with different effects or conſequences, according to the nature of the irritating cauſe and the ſituation of the part upon which it firſt acts; or, in Sydenham's words, that epidemic eryſipelata may vary according to difference in conſtitution, or years.

CHAP.

CHAP. VIII.

OF THE INFLAMMATORY RHEUMATISM.

THE inflammatory rheumatiſm is attended by a fever, and ſeems to border on the eryſipelas; the inflamed parts having in ſome degree an eryſipelatous appearance, owing probably to the membranes and ligaments being chiefly the ſeat of the diſeaſe. It is ſometimes accompanied with an efflorescence, like the inflammation of the membranes before ſpoken of; and ſhews itſelf in different parts of the body at the ſame time, according as they are more or leſs affected. Nevertheleſs it is an inflammation of a particular kind, that differs from the eryſipelas, and from all other kind of inflammations, in the offending matter being glutinous. It ſeizes particular people only; and, if I am not very much miſtaken, we may often trace it to be hereditary. Theſe people, and thoſe who have by any other means acquired a rheumatic

The membranes and ligaments the ſeat of this diſeaſe.

Seizes particular people.

diathesis, will be more particularly affected by alterations in the air, and the other causes which are known to bring on a fit of this complaint. The degree of irritability will rise to 150, and yet in general neither suppuration or mortification is the consequence; which may be owing to the inactivity of the matter confined in the inflamed parts: and whether it becomes glutinous before or after it gets out of the vessels is not material, as a disposition to this state is a pretty clear proof that it is free from much acrimony.

And does not suppurate, &c.

From this account it is evident there is no other way of relieving the patient but removing his malady by discussion; nor do I know any complaint which more certainly gives way to this treatment; whereas if neglected, it frequently becomes chronical, and renders the patient a cripple by inspissated lymph stagnating about the joints. Blood, therefore, may be taken away according to the urgency

Cured by purging.

of

of the ſymptoms, and the ſtrength and age of the patient; but purging, as in other inflammations of the membranes is the remedy on which we are in the firſt ſtage chiefly to depend: therefore I commonly order calomel twice a week, and an opening mixture of infuſion of ſena and regenerated tartar, to be taken as often as is neceſſary to procure three, four, or five ſtools a day; and an anodyne draught to allay the irritability of the habit, every night going to bed, till the ſymptoms of inflammation are ſufficiently abated. I have ſometimes directed the purging neutral ſalts to be given at proper intervals, and regenerated tartar, with eſſence of antimony, on thoſe days when evacuation is not made by ſtool. Yet in general I prefer the other method; but a ſpare cooling diet ſhould accompany which ever of the proceſſes are purſued.

A remarkable caſe, ſhewing the good effects of purging in this complaint, hap-

pened in my practice near thirty years ago; and though I have never ſince wiſhed to make ſo large an evacuation in the ſame ſpace of time, yet, by going gradually to work, and purſuing my intention regularly, evacuation by ſtool has always abated heat, pain, and their conſequences. A gentleman, twenty-eight years of age, ſubject tothe infl ammatory rheumatiſm, upon taking cold, was ſeized with a ſevere fit of this diſeaſe; and notwithſtanding bleeding, keeping the bowels open, the uſe of ſudorifics, antiphlogiſtics, bliſters, the bark, opium, and every other remedy a phyſician and myſelf could think of, yet the pain and inflammation continued more or leſs violent for ſixteen or eighteen weeks: and the only hope which remained was, that the diſeaſe would wear itſelf off in time. However, being coſtive, it was neceſſary to open his bowels; and for this purpoſe I choſe an alterative, which had been recommended to me as a

good

good medicine in the rheumatism, compoſed of three grains of *pil. cochiæ*, two grains of calomel, and one grain of opium, from which, in the ſpace of twenty-four hours after it began to operate, he had, according to his own account, forty or fifty watery ſtools, which entirely carried off the diſorder. Nor was he weakened by ſo large an evacuation; but his ſpirits roſe as the body was unloaded, and he has ever ſince been much freer from this complaint than uſual.

Since that time I have conſtantly obſerved the good effects of purging in this complaint, in removing the ſymptoms of inflammation; whether by the medicines mentioned, or by the active preparations of antimony. But when the pulſe becomes ſoft, and the inflammation is abated, the lymphatics which have been weakened by diſtenſion, muſt be enabled to perform their office of abſorption, by giving the bark at firſt with neutral ſalts,

And the bark, &c.

and afterward by itſelf, to finiſh the cure. I never knew the patient remain uncured, when this method took place immediately after the antiphlogiſtic treatment deſcribed had done its duty; and without this ſtep the cure will often remain unfiniſhed, from the juices which are out of the courſe of the circulation, remaining in the parts upon which they are depoſited.

Topics. To avoid this inconvenience as much as poſſible, the uſe of topics ſhould not be neglected. When the inflammation upon *particular parts* is very great, emollient cataplaſms, or emollient ointments, may be applied, and topical bleeding has ſometimes done ſervice; but, excepting when the parts are very tenſe, I give preference to a cerate compoſed of the *emp. de min. fus.*: a ſmall portion of wax, oil, and crude ſal ammoniac, becauſe it lies eaſy, takes off tenſion without over-relaxing, ſeldom fails promoting perſpiration, and anſwers every end that can properly be purſued

purſued by outward means, while any degree of inflammation exiſts. But this being over, warmer and more active medicaments gain preference: I have often ſeen the moſt deſirable effects from a volatile plaiſter made of diachylon, ſope, crude ſal ammoniac, and a little oil, ſuited to the degree of irritability of the patient: or, inflammation being gone, dry friction, or with flannels upon which æther or the aromatic volatile ſpirit is ſprinkled, &c. may do good ſervice; or, if neceſſary, ſome of the warm baths may finiſh the cure.

Treatment under weak relaxed fibres.

But an inflammatory rheumatiſm, it is well known, ſometimes ſeizes people of weak relaxed fibres, who are incapable of bearing great evacuations; and were the inflammatory ſymptoms to be entirely removed by purging, greater debility than is conſiſtent with health would be the conſequence. Nevertheleſs, purging more or leſs, in proportion to the ſtrength of the patient, is neceſſary. It is in this caſe

caſe that *ſpirit. Mindereri*, antimonials in ſmall doſes, Dover's powder, gum guaiacum, or ſaline and cordial medicines united, commonly relieve the patient, by promoting ſweat. Bliſters are often recommended under theſe circumſtances; and at the decline of the diſeaſe, when a ſtimulus is neceſſary, they may perhaps be ſerviceable. But to form a right judgment of what kind of treatment is proper in different degrees of this diſeaſe, under different circumſtances, we ſhould reflect upon the two extreme points, and the gradations betwixt them; and as it declines from high inflammation, and ſtrong fibre, to a direct contrary ſtate, medicaments of all kinds ſhould gradually be changed from thoſe which are highly cooling, to thoſe which attenuate and ſtimulate by their activity and warmth.

But to prevent the miſapplication of the methods adviſed, it is neceſſary to remark,

mark, that there are three kinds of chronic rheumatiſm. That which follows the inflammatory rheumatiſm, from glutinous or inſpiſſated lymph, ſtagnating in the interſtices of the membranes and other fibres: another, with ſimilar ſwellings about the joints, which ariſes from a deficiency in the office of the abſorbing veſſels, without ever being preceded or accompanied with inflammation: and a third, unattended with either inflammation or ſwelling. The ſecond ſort requires no peculiar treatment from the firſt, when the inflammation is ſubdued; but the third, though very common, is a diſeaſe which I think has never been rightly underſtood; and I cannot paſs over this opportunity without mentioning what has occurred to me, and what I have learned by practice, concerning this malady.

Three kinds of chronic rheumatiſm.

On

On the Nervous Rheumatiſm.

The ſpecies I am ſpeaking of is unattended with ſwelling, or external inflammation; has always been ranked among chronic diſeaſes, and by ſome has been called the wandering or ſcorbutic rheumatiſm: but we are led to give it the epithet *nervous*, for reaſons that will preſently appear. It is that kind, in which the patient complains of obtuſe pain in his wriſts, ſhoulders, and knees, which ſhifts about from joint to joint, and from one part of the body to another; eſpecially in cold, raw, damp weather, or when the wind is eaſterly; as he receives intervals of eaſe when the weather is in an oppoſite ſtate. The pulſe is not perceptibly affected. The tongue is ſometimes white, little ulcers in ſome inſtances appear upon the edges of it; on the inſide of the cheeks, and upon the lips: and the pa-

tient is ſometimes troubled with the piles. Dr. Armſtrong, who has deſcribed the ſymptoms of this complaint in his Medical Eſſays,* ſays, "It is perhaps the "moſt univerſal of all the diſeaſes ende-"mic to this iſland; and that the changes "from eaſe to pain are ſometimes ſo ſud-"den, and appear ſo unaccountable, that "I have heard ſenſible people compare "them to the ſuppoſed effects of witch-"craft." To the beſt of my remembrance, he is the firſt writer who has given this diſeaſe a place by itſelf, though he ſeems not to have underſtood its *ſeat* or cure.

Immediately after I had given balſam of Peru to Mr. Thomas Wilkes †, I began to conceive an opinion that the diſeaſe above deſcribed often originates in the viſcera; becauſe this young gentleman had moſt of the ſymptoms juſt mentioned, and becauſe they inſtantly gave

* P. 34. † Caſe the 7th. Sympath. of Nerves.

way

Seat of nervous rheumatiſm.

way to the nerves of the *primæ viæ* being affected with this medicine. I have therefore taken every ſubſequent opportunity of examining farther into this matter, and I think I have now reaſon to be ſatisfied that I am perfectly right in my conjecture.

This I apprehend will eaſily be conceived by thoſe who have attended to the connexion betwixt the nerves of the viſcera and the reſt of the body; and thoſe who have not, will eaſily ſee it, by reflecting upon various incidents which almoſt daily come before them. Indeed, there cannot be a clearer inſtance than that we have juſt refered to, or the intolerable pain in the abdomen, and about the uterus, ſome women, eſpecially of their firſt children, ſuffer from having their breaſts drawn. They often, it is well known, complain of an inward drawing, while the nerves at the nipple are ſtimulated by ſuction; and the pain, in very irritable habits,

habits, is ſometimes ſo great, as even to preclude the mother from giving milk to her own infant. A gentleman, with a cancer in his eye, had a pain in his hip, knees, and ancles, which was called the rheumatiſm, till a ſcirrhous liver, and a ſcirrhous meſentery, diſcovered that theſe pains aroſe, by conſent of parts, from a diſeaſed viſcera. Perſons troubled with the ſtone will often have a tingling in their fingers when they make water, and there are innumerable other inſtances which prove that one part of the brain being touched, the whole is affected.

The diſeaſe in queſtion is often preceded by the ſtomach fever deſcribed by Avicenna, or what has been called the menſenteric or viſceral fever by other writers; accompanied with a white tongue, wind, pain, and heat at the ſtomach, acid eructations, ſpaſms in the ſides, &c. And are not the little ulcers and piles (when they happen) a proof of the ſeat of this

complaint? May we not conclude, from the inſtances adduced, that whatever brings on a particular kind of irritability in the nerves of the *primæ viæ*, will produce the ſame ſymptoms?

Different methods of cure neceſſary.

The method of cure is a farther proof of the truth of the doctrine advanced; but before we proceed, we muſt obſerve, that though taking off this preternatural irritability, is the main object of attention, yet the ſame method of treatment is not always ſucceſsful, owing to variety in the cauſe of the malady. When the tongue is white, and rather furred, accompanied with heat in the ſtomach, little ulcers in the mouth, the piles, &c. we always ſuppoſe preternatural heat in the *primæ viæ*, from ſome degree of obſtruction in the villi, and ſmall glands of the ſtomach and inteſtines, and find cooling deobſtruents have a good effect. We begin commonly with a vomit, compoſed of ipecacuanha wine and emetic tartar; afterwards

afterwards calomel, ſoluble tartar, or ſal polychreſtum, and rhubarb, are given at proper intervals; and on the intermediate days, the bowels are kept open by ſal polychreſt in ſpermaceti, along with camphorated julep; by which means we abate inward heat and preternatural irritability at the ſame time. I have often known ſmall doſes of James's Powder frequently repeated, and camphor julep, do good ſervice in this inſtance; and relief has frequently been given by powders compoſed of the compound powder of crabs claws, camphor, and nitre, and by Buxton water. It is in this ſpecies that ling-liver, brains, or Florence oil, are ſometimes effectual; and I believe in the ſame manner that a liniment made of ſpermaceti and oil allays the irritability in ſores, attended with heat: oil relieves this kind of rheumatiſm. Laſtly, when the whiteneſs of the tongue, and other ſigns of heat, diſappear, the *trifolium paluſtre* may finiſh the cure.

Now when great obſtruction in the liver, or meſentery, occaſions the nervous ſymptoms deſcribed, the diſeaſe muſt be treated with its proper remedies. But it ſometimes, I think not unfrequently, happens, as in Mr. Wilkes's caſe, that preternatural irritability of the viſcera, attended with rheumatic pains in the wriſts, knees, and ancles, are unaccompanied with either heat or obſtruction; and different kind of medicines to thoſe mentioned are required to accompliſh a cure, it being a ſpaſmodic diſeaſe, for the moſt part accompanied with ſpaſms of the ſtomach, abdomen, and ſides. The tongue ſhews no ſigns of heat upon the ſtomach, nor do ulcers in the mouth, or the piles, ever appear.

It was this rheumatiſm in which tar-water did ſervice; and I have ſeen gum guaiacum afford relief. It is an almoſt certain purge, and may be adminiſtered when medicines of this kind are wanted; becauſe it warms and takes off that kind

of irritability which is ſubdued by invigorating the nerves. *Pil. Ruſi* I have alſo found ſerviceable; but along with theſe, balſam of Peru, the warm gums, ſuch as benzoin, *ſagapenum*, ſtyrax, myrrh, opium, camphor, the eſſential oils, and the bark, are the medicines from which we are to expect a cure.

CHAP. IX.

ON THE PHLEGMONOIDE RHEUMATISM.

NOTWITHSTANDING the common inflammatory rheumatiſm neither brings on ſuppuration or mortification, yet there is a diſeaſe of the membranes that much reſembles it, which too frequently deſtroys the patient by a deluge of matter. After taking cold, he is commonly ſeized with a rigor, and a ſubſequent continual fever. He complains of deep-ſeated pains in his limbs, and in different parts of the body, reſembling the rheumatiſm; an eryſipelatous efflorescence ſometimes ſhews itſelf in the parts deeply affected, which ſwell a little, without being remarkably painful when touched; and when it happens in the legs or arms, they become almoſt uſeleſs, and reſemble rheumatic limbs. It is not uncommon for the fever and efflorescence to diſappear in a little time; yet ſuppuration in different

The diſeaſe deſcribed.

rent parts of the body, unattended with inflammation, afterwards ſlowly comes on, and a hectic fever from abſorbed matter not unfrequently cloſes the ſcene.

If the diſeaſe is capable of being diſperſed, the methods laid down for the cure of the inflammatory rheumatiſm, under different ſtates, may take place, and very often with advantage; but we muſt be active in our proceedings, otherwiſe the obſtruction in the membranes covering the bones in the faſcias of the muſcles, and in other membranes of this ſort, will become confirmed, and their diſſolution an unavoidable conſequence: but I will give a caſe or two of this ſort, from whence I ſhall be better underſtood.

To be cured by diſperſion, otherwiſe ſuppuration of the membranes, the conſequence.

A man about thirty years of age, in apparent health, took a violent cold in the month of April, 1781, which brought on ſome feveriſh ſymptoms, and pain in his limbs reſembling the rheumatiſm, ac-

Inſtances.

companied with a ſlight eryſipelatous efflorescence in the ſkin. This laſt ſymptom ſoon diſappeared; but though the pain remained, nothing regular was done, till it was too late to remove the obſtruction; and then powerful deobſtruents were tried without any effect. Many weeks having elapſed, abſceſſes at different times, without inflammation, appeared in ſeveral parts of his body, and manifeſtly began in the membranes covering the bones or muſcles, diſcharging thin poor matter, as always happens under ſuch circumſtances. The firſt I think ſhewed themſelves in his neck and in one wriſt. Then another in one leg, which began in the membranes covering the tibia and fibula; a large collection of thin matter was formed betwixt theſe bones from the knee to the ancle, and upon letting it out, they were found bare. In a ſhort time afterwards, another collection of matter, which had not occaſioned any pain, was diſcovered

vered in the other leg about the joints, and upon the tendinous expanſion which covers the *gaſtrocnemii* muſcles; and by ſuch time theſe were brought into a healing ſtate, others appeared one after another on the outſide of his thighs, in his feet, his wriſts, arms, face, and in the membranes ſurrounding one eye: from all which there was a large diſcharge, and a ſlight hectic attended. Neither the bark, of which he took large quantities, nor any other remedy we tried, produced the leaſt alteration in the inactive appearance of the ſores; and at the end of three quarters of a year a ſuppuration in the lungs came on, and put an end to this unhappy man's ſufferings.

Another young man, twenty-ſix years of age, exceeding vigorous and healthy, about the ſame time, and in the ſame ſtate of air, was ſeized with this diſeaſe; and though the inflammatory ſymptoms ſoon diſappeared, yet collections of matter upon

upon the membranous parts deſcribed, without inflammation, in a month or ſix weeks time began to ſhew themſelves. After theſe were opened, freſh ones appeared, time after time, in different parts of the body, ſome of them, though without livelineſs or vigor in the fibres, healed; but the patient was now taken out of our hands by his relation, a farmer, who imagined he could cure him, ſuppoſing himſelf ſkilled above moſt men in medicine and ſurgery. I hear he bled and purged him frequently; but inſtead of carrying off the diſeaſe, freſh collections of matter aroſe; a violent ſpitting of what my informant ſuppoſed to be matter, came on, and he died tabid.

I have ſeen ſeveral inferior inſtances of the ſame ſort, and where the collections of matter were not very numerous, the patients have recovered; but the ſores always healed exceeding ſlowly, the fibres being pale, inactive, and deſtitute of vi-

gor;

gor; and what is very curious, the bark in none of the caſes which have come before me, produced any ſort of effect.

CHAP. X.

ON THE GOUT.

THE gout is another kind of inflammation which borders upon the eryſipelas, becauſe it has ſomewhat of an eryſipelatous appearance, and affects the membranes and ligaments; but it differs from the eryſipelas, becauſe the fluid diſcharged does not poſſeſs the ſame degree of acrimony; and it alſo differs from the rheumatiſm, the juices not having a gelatinous tendency. In general, it neither occaſions ſuppuration nor mortification, unleſs we ſuppoſe ſome kind of ſuppuration takes place when the ulcer accompanying chalk-ſtones is formed; but if this ſtate is excepted, the diſeaſe always terminates by diſcuſſion. It is our buſi-

The gout, though it poſſeſſes the membranes and ligaments, differs from the eryſipelas and rheumatiſm.

neſs

neſs to enquire how far nature may be aſſiſted in this work, for which purpoſe it ſeems neceſſary firſt to examine into the nature and cauſe of this complaint.

Notwithſtanding what may have been ſaid to the contrary, I join the general opinion that this affection is often hereditary; becauſe I have known children born of gouty parents afflicted with it; becauſe I have ſeen it inherited by the natural ſon of a gentleman in the ſtation of a common labourer: and thoſe perſons whoſe anceſtors have been troubled with the gout, are more ſubject to it than others. Yet it is true, it may very commonly be brought on by intemperance, and not unfrequently by contact; for many women, whoſe birth or mode of living no way intitled them to this complaint, have, notwithſtanding, been afflicted with it, from being a bed-fellow to a gouty huſband.

Hereditary, and brought on by intemperance and contact.

If the gout then is ever hereditary, it is plain the ſolid parts of the body are thoſe primarily

primarily affected; for if we look into nature, it is the organization or peculiar form and texture of its parts, that the offspring inherits from its progenitors; as likeneſs evinces, and that it is this ſtructure in animals, as well as vegetables, which alters and adapts the juices paſſing through them to their proper office. Conſequently, if the ſolids are formed in a diſeaſed ſtate, the fluids they carry will degenerate from health; and it is therefore reaſonable to ſuppoſe the alteration from nature we obſerve in the juices thrown off in an hereditary gout, is in conſequence of ſome morbid ſtructure. The ſame may be ſaid of the gout brought on by intemperance, for diet has the power of changing the whole body; its very ſtructure, like the ſtructure of vegetables in various ſoils, is altered, and this diſeaſe, in proceſs of time, is the conſequence of luxury and convivial meetings. Nor is there any great difference when the

A diſeaſe of the ſolids.

the diſeaſe is brought on by the abſorption of gouty matter; for by laying hold of and altering the ſolids, a gouty diatheſis is brought on; and thus it happens that acquired gouts are equally difficult to remove, with thoſe which are inherent in the conſtitution.

In thoſe hereditary diſorders where we are certain what parts are affected, we always find the affection in the ſolids. In the ſcrophula, the glands are the ſeat of the diſeaſe. In another hereditary diſeaſe, improperly called by the ſame name, the membranes are the parts moſtly affected; but the muſcular fibres under them, when laid bare by an imperfect ſuppuration, appear weak, pale, and inactive, and the matter diſcharged is thin and watery: nor can any alteration be made by the moſt powerful of thoſe remedies, which are known to promote good matter, and a healthy elongation of the fibres under common weakneſs and relaxation. When

we

we are fortunate enough to heal theſe ulcers, the fibres and matter remain in *ſtatu quo*; and a cicatrix is ſlowly induced by great length of time, fairly evincing that nature cannot be changed, and that ſhe muſt always be managed in her own way. In theſe inſtances we ſee into the conſtitution, and it is evident that a diſeaſed ſtate of the ſolids brings on the diſeaſe in the fluids; and if this happens in one inſtance, why not in another?

Were hereditary diſeaſes to ariſe from contaminated blood, they could not long be tranſmitted, becauſe the blood and the juices derived from it are continually changing. For this reaſon it would be impoſſible for hereditary diſeaſes to ariſe again after lying dormant a generation, if they did not originally reſide in the ſolids; but theſe being the parts affected, an exciting cauſe may ſtir up a malady which has not ſhewn itſelf, becauſe it has not been aggravated or diſturbed. Be-

ſide, if the diſeaſe reſided wholly in the blood, it might probably be cured; whereas neither medicines nor diet has hitherto been diſcovered, ſufficient for the purpoſe; and it is therefore reaſonable to ſuppoſe it owing to a peculiar kind of ſtructure, that phyſicians have not been able to cure an hereditary gout, and that the boaſting of noſtrum mongers has always ended in diſcredit.

From the nature of thoſe cauſes which aggravate or bring on this diſeaſe, it might be imagined that the gout is an inflammatory diatheſis of a particular kind; but though it is frequently attended with inflammation in ſtrong athletic habits, yet in an oppoſite ſtate of the ſolids, we ſee this diſorder often very troubleſome without any inflammatory ſymptoms. Whence we may conclude, that preternatural heat is a ſymptom under particular circumſtances. The many nervous ſymptoms attending it, have induced phyſicians to ſuppoſe

Inflammation in this diſeaſe owing to particular circumſtances.

ſuppoſe it an affection of the nerves; and there is no doubt but that the nerves are equally affected with the reſt of the body. I believe with Boerhaave *, that in conſequence of a diſeaſed ſtate of the nerves, the nervous fluid alſo becomes diſeaſed; and whether ſtill reſiding in the nerves, or when thrown off into the extremities, occaſions many of the ſymptoms uſual to the gout; becauſe the internal parts are relieved, and the limbs are affected when a metaſtaſis happens.

Nervous fluid, what.

By nervous fluid, we mean what we diſcover upon diſſecting the brain or nerves; and which a rupture in the tumor accompanying the biſid ſpine, diſcovers to be eſſentially neceſſary to life †: for we may eaſily ſuppoſe a fluid reſiding in the nerves, of ſuch high importance to life as it evidently appears to be, to bring on (when both the nerves and itſelf are diſ-

* Baron V. S. C. ſect. 12. 62.

† See Diſſertation on the Brain and Nerves.

eaſed) the nervous ſymptoms we diſcover before the gouty matter is thrown off into the extremities. But the ſudden tranſitions of the gout from one part of the body to another, has been an objection to this opinion; it being imagined that a watery fluid is incapable of paſſing through the minute veſſels with ſuch velocity as the pain in this diſeaſe is known to move: and yet in Mr. Rook's caſe*, the pains which aſcended as quick as lightning from his feet, heels, and ancles, to his ſtomach, terminated by a diſcharge of green aqueous liquor! However, I can eaſily conceive that the pains in the gout move about by conſent of parts, without the nervous fluid keeping pace with them; becauſe impreſſions made upon any part of the brain affects the whole. In Mr. Wilkes's caſe, the pain in his wriſts, ſhoulders, and knees, inſtantly vaniſhed when the bal-

Tranſition of the gout.

* Lond. Med. Inq. vol. i. p. 41.

ſam

ſam of Peru came in contact with the nerves of the ſtomach. We have ſeen a gentlewoman inſtantly ſeized with violent ſpaſms in her ſide every time an ulcer, with acute ſenſation on the outſide of her ancle, was gently preſſed with a ſoft linen rag to take up matter; and may not therefore a diſtant gouty pain be inſtantly brought on by a local affection of the nerves, eſpecially as the whole nervous ſyſtem is diſeaſed?

Much inquiry has been made about the nature of the gouty matter by chemical experiment, in hopes of diſcovering an antidote; but to very little purpoſe. All we know of it is from its common effects, by which it appears not to have any great degree of acrimony; otherwiſe it muſt of courſe bring on ſome kind of diſſolution of the parts it often ſo long infeſts. I have ſeen a quantity of it collected under the cuticle, which at firſt appeared to be a clear lymph, afterwards it daily became

Gouty matter.

more and more opaque, and at laſt terminated in a chalk-ſtone, evincing its mildneſs by not corroding through ſo ſlight a covering. Are not theſe chalk-ſtones a proof of the groſſneſs of the matter forming them? and does not gouty matter ſeem to offend more by quantity or groſſneſs than acrimony? My own ideas of this diſeaſe are, that, in conſequence of a particular ſtate of the ſolids, the juices acquire a morbid diſpoſition, which in part brings on what are called gouty ſymptoms; but upon a depuration being made to the extremities by an effort of nature, the body is relieved till a freſh accumulation of gouty matter again diſturbs the patient. May it not then be accepted as an inconteſtible fact, that nervous energy is leſſened, and a great degree of morbid irritability brought on by this malady? and that both theſe effects ought much to be attended to in the cure?

Gouty ſymptoms how brought on.

Inſtead,

Gouty matter to be removed out of the body.

Inſtead, therefore, of looking for medicines to correct gouty matter, it is the buſineſs of the phyſician, if we are to imitate nature, to remove it out of the body by thoſe means different circumſtances make moſt ſuitable. A common fit of the gout is a natural expulſion or derivation of the gouty matter into the extremities. When it has been flying about the body a conſiderable time, a looſeneſs will not unfrequently relieve the patient, and ſweating has ſometimes proved critical. In Mr. Rook's caſe * we plainly perceive his fits of the gout were carried off by the gouty matter being diſcharged out of the body. When gouty people have been troubled with violent flatulency, acrid eructations, reſtleſs nights, with heavineſs of the whole body, &c. I have frequently ſeen the moſt deſirable effects from calomel, aſſiſted by gentle purges:

* Lond. Med. Inq, vol. i. p, 41.

and from theſe premiſes we may, I think, ſafely conclude, that the true method of relieving the gout is by ſupporting nervous energy and evacuating the gouty matter.

By purging.

Now when nature herſelf brings on a regular fit of the gout, the unloading the nerves is accompliſhed; but when ſhe is embarraſſed in this work, I have never yet ſeen, under an inflammatory ſtate, any method equal to purging in giving immediate relief. Dr. Cheyne * ſays, "I have "known ſome eminent phyſicians have "ſo little regard to Sydenham's opinion "in this matter, that in the fit of the gout "itſelf, at whatever time it happened, "they never ſcrupled to drive it off, both "from themſelves and others, by ſtrong, "quick, and active purges; which they "repeated every morning whilſt the fit "continued, and at night quieted the tu-"mults they occaſioned, and expelled the

* Eſſ. on the Gout, p. 35.

"gouty

" gouty humours introduced into the ha-
" bit by them, with cordial and warming
" medicines mixed with opiates. This
" method they continued till the pain was
" gone, and the tumor ſubſided. And to
" prevent its return, carry off all the
" remaining goutiſh humours, and to
" ſtrengthen the habit, they purſued gen-
" tle ſtomach purges, aromatic diluters
" and warm alteratives, till a ſtrong con-
" ſtitution was obtained: *and moſt certain*
" *it is, this method will cure any fit of the*
" *gout, how obſtinate ſoever, and that in a*
" *few days.*" And if purging could ſo ſoon and effectually carry off a fixed gout, there is every reaſon to expect the moſt ſalutary effects where the diſeaſe is not determined to one point. Indeed, this is the only inſtance in which I have tried it, except when the gouty matter has ſeized upon the head, ſtomach, or bowels; and under theſe circumſtances proper purges give the moſt immediate relief.

Sydenham ſeems to have thought that the gout could terminate no other way properly but by falling upon the extremities; his practice was directed accordingly, and I am very apprehenſive his doctrine about purging in this complaint, has ſince his days been carried farther than common ſenſe could ſupport it: for wherever the gouty matter could not be brought into the extremities, cordials and coſtiveneſs would only ſupport the patient's ſpirits in a long protracted diſeaſe. If nature points out a diſpoſition to fix the gout in the extremities, ſhe ſhould undoubtedly be aſſiſted, if ſhe wants aſſiſtance; or in retrocedent or miſplaced gouts, we may with great propriety endeavour to bring it into the extremities by the remedies commonly uſed on this occaſion; but it will not always happen that either irritation or warm bathing, &c. will accompliſh our deſigns: and if we fail in our intention, it will certainly, in caſes of exigency,

exigency, be right to attempt a mitigation of the ſymptoms by purging; as we can always make a diſcharge of lymph from the bowels with more certainty than we can make any other evacuation. Nor is it uncommon for a metaſtaſis of matter to follow the uſe of purges, which always tend to render the whole ſtate of the veſſels pervious.

Purges to be managed with caution.

This evacuation in gouty people muſt, however, be managed with more caution than is required in moſt other diſeaſes, when they are neceſſary; on account of that deficiency in the power of the nerves, ſo manifeſt in this complaint. For this reaſon, except where the ſymptoms of inflammation forbid, we muſt ſupport nervous energy at the time evacuation is made; by chooſing thoſe purges which warm and invigorate the nerves: nor muſt a greater evacuation ever be encouraged than the patient's ſtrength will very well permit; remembering that

draſtic purges may do injury by enervating, though thoſe which act moderately give relief. I can ſafely aver I have ſeveral times ſeen, when inflammatory ſymptoms have come on with remarkable affection of the head, breaſt, and abdomen, the patient moſt effectually relieved by purging and ſaline medicines. Indeed, it appears to me that under an inflammatory ſtate, purging is the moſt expeditious and certain way of removing the gout from the head, lungs, &c. for if it could be removed from the foot, for inſtance, in a ſhort time by this proceſs, why not from any other part of the body? And while a ſtimulus is kept up by inflammation, purges I believe cannot have any bad effect. On the contrary, where there is great debility without inflammation, bliſters, ſinapiſms, and ſmall doſes of James's powder in the cordial confection, are the remedies on which we are chiefly to depend in removing a vague or miſplaced gout.

But

But even where the nerves of the viſcera are rendered torpid, and almoſt inſenſible to the effects of ardent ſpirits, and warm active cordials are neceſſary to give warmth, and enable them to exert themſelves in this oppreſſed ſtate; yet gentle purging is alſo highly uſeful: for though the ſymptoms ariſing from a deficiency of nervous energy may be relieved by ſtimulating cordials, yet I always obſerve the work is but partly done till ſome evacuation is made from the ſtomach and bowels. It is in this inſtance that purges, which warm and invigorate the nerves, are ſo very ſerviceable. If we reflect, there is not any thing more common than pain, ſpaſm, and oppreſſion to affect the ſtomach and bowels, notwithſtanding a coldneſs in them has been taken away by remedies poſſeſſing heat; but upon proper doſes of *hiera picra* being given, the offending matter has been carried away in a few looſe ſtools, and eaſe and ſpirits given

given to the patient. In the ſame manner opening clyſters, with aſſa fœtida in them, do good ſervice in a gouty colic, by occaſioning a diſcharge of gouty matter, and warming the nerves, and giving ſpirits at the ſame time. However, we by no means think the gout is always to be relieved by evacuation, or that evacuations are not ſometimes improper; becauſe gouty matter does not ſeem always to aſſiſt in occaſioning gouty ſymptoms, but the gout itſelf often brings them on by affecting the nerves; and in enfeebled ſubjects, medicines which give vigour to the nerves are thoſe chiefly to be relied on. Accordingly we find generous warm cordials, volatile ſalts, fœtid gums, warm ſtomachics, ſteel, &c. afford the moſt certain relief under theſe circumſtances.

Gout not always relieved by evacuations.

Bleeding is another evacuation recommended in this diſeaſe; and when a conſiderable fever comes on in ſtrong plethoric habits with a full pulſe, oppreſſion in any

Bleeding.

any part of the viſcera, &c. blood may be taken away as the caſe may require. And I can bear teſtimony to the truth of what thoſe writers have ſaid, who aſſert that bleeding under theſe circumſtances often occaſions a metaſtaſis of gouty matter to the extremities; but it muſt be remembered, that though bleeding leſſens plethora, it enervates. Sydenham ſays it does miſchief; and as it cannot poſſibly do the patient ſervice otherwiſe than by unloading the veſſels, I am led to conclude it ſhould be taken away with caution by a ſmall quantity at a time, and by repeating the operation if abſolutely neceſſary.

Treatment of intermediate ſtate.

But there is an intermediate ſtate frequently happening to gouty perſous, in which there is neither great heat nor great coldneſs, and yet the patient is feveriſh, and feels both theſe ſymptoms, in ſome degree or other; and the gout ſhews itſelf by pain in moſt parts of the body without fixing in any one of them.

In

In this inſtance the bowels ſhould firſt be opened; becauſe gouty ſymptoms in different parts of the body ariſe by conſent of parts, from an affection of the ſtomach and bowels, and then medicines compoſed of cordials and cooling remedies do eminent ſervice. I have repeatedly ſeen a mixture compoſed of regenerated tartar, cordial confection, pepper-mint, and nutmeg-water, produce effects that have ſurpriſed me, by warming the nerves, and making an evacuation either by urine, or by bringing on a gentle uniform ſweat, which ſhould be continued as long as the ſymptoms require, if it be diſcovered that they give way to this treatment. Sydenham, to whoſe authority I pay great reſpect, condemns ſweating in this diſeaſe; but ſo far as my obſervations direct me, I am led to believe it is only profuſe evacuations which do harm.

Opium. Opium has been decried in this diſeaſe by phyſicians of the firſt eminence, except

cept in vomiting and looſeneſs; and perhaps uncombined with other remedies, its ſedative quality may have done injury, where the complaint had brought on great nervous oppreſſion. Sydenham, whoſe practice was guided by experience, did not reject the uſe of Venice treacle, and he depended upon laudanum when the ſtriking in of the gouty matter threatened death. His pupil, Dr. Dover, gave two drachms of Venice treacle for a doſe, when the gout was in the ſtomach; he depended much upon his ſweating powder in relieving the patient of pain and other ſymptoms; and daily experience fully evinces the ſafety and advantage of opium in this complaint, when joined with warm and penetrating ingredients: for theſe, by ſupporting the energy of the nerves, prevent its having any bad effect. Of this Dr. Cheyne * ſeems to have been aware;

* On the Gout, p. 28.

and

and yet it may be hard to ſay from his directions whether opium ought to be given or not; for in one part of the ſame paragraph he ſays, "it is the ſafeſt ſide "not to adminiſter *any kind* of opiates in "the fits, becauſe they conſtantly pall the "appetite, and leave a nauſeating, and "perhaps a reaching on the ſtomach, the "readieſt way to bring the gout there." And in another, "that by joining ſpicey "nervous and ſtomachic medicines with "them, they procure reſt, eaſe from pain, "and anſwer all the other intentions in "the cure of a fit of the gout."

Stimulating ingredients to be joined with it.

In imitation of this practice, I commonly join with opium ſuch warm and ſtimulating ingredients as the preſence or abſence of inflammation directs; where pain or ſpaſms require its uſe. Nor do I know any ſtate in the gout which forbids the uſe of opium, except when the nerves of the ſtomach are become torpid. The practice of giving it after purging, has been

been proved to be right by experience. When after an expulſion of the gouty matter, the whole body becomes ſo very irritable, that violent ſpaſms affect every part of it upon motion; opium, joined with warm ſpices or camphor, cannot be diſpenſed with: and in gouty coughs the elixir paregoricum, joined with a decoction of myrrh and camphor julep, will relieve the patient. But I would wiſh opium to be diſuſed as ſoon as the ſpaſms will permit; and recourſe be had to thoſe remedies which remove morbid irritability by invigorating the nerves; becauſe in thoſe people who have taken it conſtantly for ſeveral years by way of prevention, I have always remarked a ſallow complexion and a deplorable debility to be the conſequence. I have obſerved the moſt deſirable effects from the uſe of opium and ſudorifics, in mitigating the pain accompanying a gouty looſeneſs; yet I always think it prudent to premiſe a doſe

of rhubarb with a drop of oil of cinnamon. Nor ſhould any attempt be made to ſtop the vomiting, without firſt clearing the ſtomach by a gentle vomit or a ſtomach purge; and then the bitter tincture and a little regenerated tartar in chamomile tea, will probably alone be ſufficient, for the purpoſe: though I have ſeen a very different treatment remove this ſymptom, when this remedy and the uſual methods proved ineffectual.

Fixed air. A gentleman about fifty-ſix years of age, of ſtrong fibres, and naturally a good conſtitution, had been ſubject to an hereditary gout from his youth; and he latterly underwent long and very ſevere fits of this diſorder: but inſtead of the gout being thrown to the extremities as uſual, he was ſeized with a moſt violent vomiting, which returned ſeveral times a day, in oppoſition to every method myſelf and another phyſician could preſcribe. Being tired of the liquors he commonly uſed,

uſed, he had recourſe to ſome very thin *ſour mead*, which removed the ſickneſs, and ſtopped his vomiting. Upon taſting it, and giving my opinion that it would occaſion the colic in moſt men, it was laid aſide, and the vomiting returned. He had recourſe to it again with former ſucceſs, and told me he was convinced, from his own feelings, that mead had ſome power of nouriſhing the ſtomach, with which the medical gentlemen were unacquainted. But the cauſe of its giving relief did not long remain a ſecret; for upon pouring ſome of it into a glaſs, I ſaw it was very full of fixed air. Wherefore ſuppoſing by its ſedative property it leſſened the irritability of the nerves in the ſtomach, I adviſed him to purſue his remedy; and by drinking a glaſs three or four times a day, or when ſick, he was immediately relieved. His ſtock of liquor, however, conſiſting of two bottles only, being ſoon exhauſted, his vomiting

returned; but upon ordering him draughts of ſalt of wormwood, cordial confection, and mint-water, to be taken in a ſtate of fermentation with lime juice, of which he had plenty by him, he was cured of this troubleſome ſymptom, which had probably diſcharged the gouty matter, as he eſcaped a fit at this time. I have ſince ſeen equal advantage from this method in ſimilar inſtances; and it was probably under the ſame circumſtances that cyder and perry were given with ſucceſs for the gout in the ſtomach.

Gout in the extremities.

When nature, inſtead of being embarraſſed, relieves herſelf by expelling the gouty matter to the extremities, or what I believe is more common, when it ſwells and inflames theſe parts, from being incapable of paſſing through the ligaments, we are to conſider the diſeaſe in a different point of view; and it is the buſineſs of the aſſiſtant to prevent its retroceſſion. But the queſtion is, whether we ſhould attempt

attempt to accompliſh this point by purſuing the common practice of keeping the bowels open, occaſionally ſupporting nervous energy, and leaving the patient to torture, flannel, and patience; or whether we ſhould give him eaſe by promoting a diſcharge of the gouty matter from the affected part?

Dr. Sydenham ſays, "pain in this diſ-"eaſe is nature's remedy, and the more "violent it proves, the ſooner the fit ter-"minates; the intermiſſions are longer, "and more perfect, and *vice verſa*." Wherefore phyſicians have ſince laid it down as a rule in practice, that the pain ought not to be mitigated by external remedies of any kind whatſoever; which reaſoning cannot, I think, be ſupported by the obſervation Sydenham made, becauſe the pain, ſpeedy termination of the fit, and the length of the intervals betwixt the fits, were clearly owing to the vigour with which the matter was expelled. Nor

could pain, which is manifeſtly a conſequence of diſtenſion, excite a greater flux of gouty matter; becauſe we have ſeen it neither occaſions inflammation nor a flux of humours to the part it affects; and we verily believe it to be no way ſalutary in this diſorder, but a ſymptom troubleſome and injurious to the patient. Nor can there be any doubt but it ought to be mitigated, to prevent its diſturbing the animal œconomy; and in every inſtance I have met with, whether in books or in practice, where pain has been properly removed, the patient has received eaſe with ſafety.

Whether topics ſhould be applied.

Pain, however, is not the only inconvenience whcih ſhould induce us to promote an exudation of the gouty matter; for by lodging in the part affected, moſt of it is abſorbed back into the habit, is a freſh *fomes morbi*, and occaſions a quicker return of the diſeaſe. Accordingly, in the firſt fits of the gout, while the veſſels are pervious

pervious and active, the part ſweats, and the paroxyſms have long intervals; but as the veſſels and fibres are weakened and obſtructed by frequent repetitions of the complaint, the offending matter does not eſcape outwardly, and the fits are more frequent: and from what we have obſerved about the gout being received by contact, I think an abſorption of gouty matter ought, if poſſible, to be prevented.

But though pain does not occaſion a termination of the gout to the part it affects, it may be aſked, whether gouty matter, by irritating, does not produce this effect, and whether removing it by exudation may not therefore do injury? To which we anſwer, it can only do injury by miſapplication. It is only where the inflammation is great, that we think topics neceſſary. In caſes where nature is remiſs, and irritation is required to invite the gout downwards, the irritating

cauſe may be ſuffered to remain undiſturbed till the diſeaſe is invited or expelled into the extremities; and it may then in every inſtance be ſafely diſcharged: for it is certain, by the manner in which the firſt fits of the gout terminate, that the office of nature does not end in throwing the gouty matter into the extremities, but in diſcharging it entirely from the body. Gouty matter ſtagnating in the extremities, ſeems to depend upon accidental circumſtances; and in promoting its exit, we only finiſh the work which nature has begun.

There is ſtill a more weighty charge againſt the uſe of external applications, for it is ſaid they often occaſion a retroceſſion of the gout; but this we apprehend is owing to the compoſition and nature of the remedies employed: for though emollient cataplaſms, warm bathing, camphor, aromatic oils, and anodyne ſpirituous applications, have the property

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of giving eaſe, either by relaxing or taking off the ſenſibility of the part; yet they have no property in themſelves of promoting a diſcharge; and the matter being ſet at liberty, is either diſcharged outwardly, or retrocedes, according to its ſituation. Even bliſters increaſe the inflammation for a while, and may in the firſt inſtance thus occaſion a return of the gouty matter, by ſetting it at liberty, and not ſuffering it to eſcape.

Compoſitions for promoting a diſcharge of gouty matter, muſt be ſo managed as to be capable of ſoftening the inflamed parts without over-relaxing them; for either tenſion or over-relaxation will prevent exudation. They muſt have an attenuating and ſtimulating property, to invite the humours outwards, and yet be incapable of inflaming; and in this intention the ſtate of inflammation muſt direct us, as is already obſerved. If the inflammation is great, a neutraliſed ſoft plaiſter, that does

does not adhere, will anſwer the purpoſe. If the parts are leſs tenſe, and require a warmer ſtimulus, a volatile plaiſter will be preferable; but along with theſe applications, inward medicines muſt be given, ſuited to the ſtate of the patient, to promote an outward diſcharge; and when the gout is ripe enough for the purpoſe, i. e. when the metaſtaſis ſeems to be about complete, theſe methods can ſcarcely fail evacuating the obſtructed fluids, and giving eaſe to the patient: but if pain in the inflamed part requires it, opium, joined to other proper remedies, may be occaſionally given, till it is proper to lay the flannel aſide.

Bark and ſteel.

Sydenham recommended the Peruvian bark, and Cheyne, bark and ſteel, as moſt effectual medicines in ſtrengthening and enlivening the blood and fibres, and in promoting digeſtion in the intervals of the fits of the gout; and in enervated ſubjects I join them in opinion. But in habits

habits of hot temperament, and ſubject to inflammation, fever and other inflammatory ſymptoms are not an uncommon conſequence of their uſe, unleſs given in very ſmall doſes. For this purpoſe an infuſion of bark in cold water, ſeems to be the moſt proper form, entirely omitting the ſteel; for though this medicine may ſometimes bring on a regular fit of the gout, yet in the ſtate laſt deſcribed, even in Bath water, it is moſt likely to be pernicious, and ſhould not be uſed.

Should a fever ſupervene from an improper or untimely uſe of the bark or ſteel, it may commonly be ſubdued by gentle purging and ſaline medicines; but when the gout is fairly gone off, I ſee no occaſion for the practice Dr. Mead * adviſes, of purging, to carry off the morbid humour which cauſes the ſwelling. On the contrary, I am fully perſuaded of the

* Monita & Med. Præcept. cap. 12.

truth of what Sydenham aſſerts, that it will often (by irritating the whole body) occaſion a return of the complaint. Nor is purging at all uſeful or neceſſary in the itching which frequently follows old gouts; becauſe the matter producing it lodges upon the ſkin, is out of the reach of purges, and may be readily removed, and the diſeaſe cured by the warm bath, or rubbing the body for ſome days well with ſpunge ſoaked in warm water. Rendering the whole ſtate of the veſſels pervious, and opening the pores, ſeems to be the beſt method of removing the remains of the diſeaſe, and preventing a freſh accumulation of gouty matter, becauſe this may be accompliſhed without occaſioning much diſturbance; and perhaps mercury, ſulphur, and Bath waters, where a hot temperament did not forbid their uſe, have gained credit by producing theſe effects.

Bath waters.

Iſſues have alſo been ſaid to be ſerviceable in this diſeaſe, but I never could diſcover that they prevented it: I have ſuffered chalk-ſtones, accompanied with an ulcer, to remain in the feet of old people; and as every diſcharge from the affected part muſt be beneficial in a fit of the gout, the practice ſeems to be adviſeable*; but I perfectly agree with thoſe who depend upon a temperate regular regimen as the only prophylactic. This avoids an exciting cauſe; and experience has abundantly ſhewn, that, when properly purſued, it often keeps this diſeaſe from giving much diſturbance; but no ſooner does irregularity take place, than we are convinced the *ſedes morbi* is ſtill exiſting, and that a radical cure of the gout is not to be obtained. Iſſues.

Directions concerning exerciſe and diet in the gout, have been ſo fully given by

† See Mr. Rook's caſe, Med. Inq. vol. i. p. 48. 49.

writers,

writers, that very little can be added, except we proteſt againſt the opinion of thoſe who aſſert that the patient may always paſs immediately from one extreme to the other, in his way of living, with advantage and ſafety. Perhaps they may inſtance the young and vigorous in their favour, whoſe ſtrength will admit almoſt all kind of changes in diet with very little inconvenience; but in people long accuſtomed to any particular method of living, it becomes habitual, and cannot haſtily be changed without danger. This is very evident in the cure of wounds. I took off a farmer's hand about forty years of age, and ordered him a low diet during the ſubſequent inflammation. Inſtead of the lips of the wound ſwelling, or the wound itſelf digeſting at the uſual time, it diſcharged a gleet, became ragged, pale, gloſſy, and flaccid; and the ſtump began to acquire a conical form, from the fibres retracting backward. Upon inquiry,

quiry, I found this man had uſually, for many years together, allowed himſelf two gallons of ale a day; and I immediately concluded the want of natural vigour, ſo evident in the complexion of the wound, was owing to the reſtraint he now lay under. Accordingly I adviſed him to have recourſe again to his favourite liquor, and to ſteer in the middle way betwixt the two extremes. He willingly obeyed my injunction; and livelineſs in the fibres, and a diſcharge of mild good matter, ſoon evinced the rectitude of our proceedings. I took a ſcirrhus out of an elderly gentlewoman's breaſt, gave the uſual directions, and at the firſt dreſſing no wound ever looked better; but in two or three days it began to gape, look gloſſy, and diſcharge an ichor, which induced me to ſuſpect that ſhe had lived freely; but my inquiries only brought out that ſhe had now and then drank a dram. Upon this, I ordered her a glaſs of brandy or two in

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the day, and the wound next morning looked a little more vigorous; but it ſoon degenerated, in a few days more became enormouſly wide and inactive, and death ſoon finiſhed the ſcene. I was informed afterward, by her nurſe, that ſhe had for many years made it a conſtant rule to drink a gallon of brandy a week. I was convinced that we loſt our patient for want of her common ſupport, and that even bad habits cannot with ſafety be ſuddenly altered. Medical hiſtory abounds with inſtances of the ſame ſort; and are not therefore ſudden alterations in gouty habits moſt likely to be attended with ill conſequences, eſpecially as nervous energy is already impaired?

Gout in old people.

We have already ſpoken of the ſtate of the gout, which happens in old people who have been ſubject to this diſeaſe, where the conſtitution being worn out, it harraſſes the patient without any ſigns of a criſis; and the only relief he obtains is from

from thoſe remedies which ſtrengthen the ſtomach and invigorate the nerves: but there is alſo another kind of gout in old people which is no way ſerviceable. It generally comes on towards ſeventy years of age in thoſe who have never been troubled with it before, and without indiſpoſition at the time. No violent degree of pain attends; though in other reſpects the foot and leg ſwell, and have a perfect gouty appearance, which goes off upon the uſe of flannel, and living according to the rules of common-ſenſe.

Reflecting on theſe appearances, I have been led to ſuppoſe that at this time of life, the juices may have acquired a diſpoſition which renders them incapable of paſſing through ligaments and tendons injured by old age; and ſtagnation occaſions the ſwelling deſcribed. Perhaps what is called a regular fit of the gout may always happen in this manner. The lymph being loaded with that kind of

matter productive of chalk ſtones, is incapable of paſſing through compact ligaments; of courſe it ſtagnates in them, and by ſtimulating determines gouty matter from the whole body to this part, and thus relieves the patient. This doctrine deſerves a fair inquiry; becauſe, if it be true, what has hitherto been called an effort of nature, will appear to be nothing more than an accidental obſtruction (owing in part to ſtructure) in the ligaments about the joints, eſpecially in the extremities, from their being depending parts; and that nature herſelf having no choice in this buſineſs, the gouty matter may be diſcharged from the habit with equal advantage by various ways. When external ſtimuli, like gouty matter, can be made to invite this diſeaſe into the extremities, they do good ſervice; but when it happens to ſeize upon the viſcera, or does not ſettle in any particular part, the propriety of removing it immediately out

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of the body by the methods recommended, will be obvious. Nor can I join thoſe in opinion who ſuppoſe there is no ſuch thing as gouty matter; becauſe I have ſeen it: and I cannot think chalk-ſtones could be formed, unleſs from juices of a particular kind. All which ſentiments I wiſh to be looked upon as an appendix only to what has already been written upon the ſubject, my plan leading me to conſider how far diſcuſſion ought to be purſued in the cure of this diſorder.

CHAP. XI.

INFLAMMATORY OEDEMA.

OEDEMATA, which come on ſuddenly, are ſometimes accompanied with an eryſipelas, or more commonly a ſimple inflammation of the ſkin; which occaſions our placing this otherwiſe indolent, cold, doughy tumor, in the inflammatory claſs, requiring diſcuſſion, in conformity with nature, who always terminates it in this manner, unleſs interrupted by ſome outward cauſe.

An oedema is always local, and it often happens that one leg, for inſtance, after ſome indiſpoſition, ſhall ſuddenly be ſeized with this complaint: I have repeatedly known a warm clyſter given to relieve a pain in the bowels, eſpecially in women in child-bed, with the deſired effect; and an oedema, attended with ſome degree of inflammation, in which the ſkin both in the leg and thigh being diſtended to an enormous ſize, in a few hours,

hours, was the conſequence; and every inſtance I have ſeen, became as perfectly local as an abſceſs after a depoſit of matter.

From this account it may appear, that the ſwelling is owing to a metaſtaſis of inactive matter from the blood and other juices; and yet there is reaſon to believe that the ſymptoms, ſometimes at leaſt, ariſe from nervous affection; and the ſudden accumulation of lymph to be owing to a want of power in the abſorbent veſſels to do their office: becauſe in the caſes alluded to, with pain in the abdomen, there did not appear any diſtenſion or ſigns of accumulated lymph in this cavity, ſufficient to account for the tumor in the leg and thigh, which appeared upon the pain being removed. We know the compreſſion of a large bundle of nerves will occaſion an oedema; and may we not ſuppoſe that the cauſe of pain was tranſlated from one part of the nervous ſyſtem to

another; and thus by rendering the nerves incapable of doing their office properly, occaſioned the diſeaſe in queſtion?

Are not theſe conjectures ſupported by the method of cure? For theſe tumors are ſuddenly diſperſed, without inconvenience to the patient by this proceſs; being never, that I know of, prevented from readily recovering a good ſtate of health, which ſurely could not happen if the ſwelling aroſe from morbid lymph: whereas, if we can ſuppoſe it to be an accumulation of lymph only from nervous affection, it is eaſy to ſee how it may paſs into the veſſels of the body without doing injury.

The only danger in treating this complaint is in miſtaking it for an anaſarca, brought on by ſome other diſeaſe; with which, from the days of Galen †, it has

† De Arte Curan. ad Glauc. lib. ii. cap. 3.

been

been conſtantly confuſed: whereas we ſhall ſhew, in ſpeaking of the cold oedema, that it is a diſtinct diſeaſe, and always confined to one place or member. For if the lungs are clear, and no ſigns of fulneſs or ailment appear, except in the affected part, we cannot well be miſtaken; and it will not be neceſſary to heſitate about the method of cure.

In an oedema, which comes on ſuddenly, and is of ſhort duration, the fluids in the cellular membrane have not had time to become viſcid; they are therefore very eaſily ſet at liberty, and the inflammation diſappears as the diſtenſion, which gave it birth, ſubſides. I have conſtantly, in this inſtance, applied, with the moſt deſirable ſucceſs, a cerate compoſed of the brown plaiſter made of red lead, bees-wax, and oil, of ſuch a conſiſtence as to lie ſoft and eaſy, without relaxing too much: but bandage muſt be uſed as

ſoon as the ſwelling begins to ſubſide, and be gradually increaſed as circumſtances permit; for it is impoſſible to expect perfect relief without attending to the proper application of this remedy. The patient ſhould be gently purged at the ſame time, at proper intervals, with ſmall doſes of calomel, rhubarb, ſena, and ſoluble tartar. Diuretics or ſudorifics may be given, with a view of haſtening the cure; and the bark will generally be neceſſary before it is complete. At firſt, regenerated tartar may be joined with it, as by this means it becomes the moſt powerful deobſtruent and diuretic I know; but when evacuations are no longer neceſſary, the bark may be given by itſelf with proper advantage.

CHAP.

CHAP. XII.

ON THE OPHTHALMIA.

THIS inflammation (which not unfrequently riſes ſo high as to form the red ſwelling of the *tunica adnata*, is called by the Greeks *chemoſis*), having, its ſeat in the membranes, terminates either by diſperſion or a diſſolution of the parts affected; occaſioning a confuſion in the humours of the eye (*ſynchyſis*) by leaving the cornea opaque, or corroded; or in a redneſs and weakneſs, without either heat or pain. Of courſe diſperſion is the method of cure; in which opinion the whole faculty agree, and that it ſhould be accompliſhed as ſoon as poſſible, to prevent the conſequences above mentioned. For this purpoſe it was uſual firſt to enquire whether extraneous bodies are not the cauſe of the complaint; becauſe in ſuch caſe a cure cannot be expected till they are removed. The hair upon the edges of the eye-lids turning inwards (*trichcaſis*)

Ophthalmia, its ſeat and effects.

To be removed as ſoon as poſſible.

Neceſſary enquiries for this purpoſe.

(trichcaſis) are of this number; and the remedy is by an operation * deſcribed in chirurgical books. Small puſtules in the cornea muſt be opened, by taking off the head of the tumor, and the ulcers kept clean by waſhing with ſome emollient lotion till they heal. Waſhing alſo may alone remove the irritating cauſe in epidemic ophthalmia, which generally diſappear when the ſtate of air changes; but the tedious inflammation of the eyes, which ariſes in children from cutting the large teeth, can only be mitigated, till they make their way out, or till they are let out by a lancet: and then it gradually diſappears by the common remedies. Paulus † in the dry ophthalmia, *(xerophthalmia)* preſcribes thoſe remedies which ſoften and promote a diſcharge; but later writers ‡, on the contrary, uſe drying

And how to remedy ſome caſes of ophthalmia.

* See Ware on the Ophthalmy.

† Cap. 23. lib. iii.

‡ St. Yves, chap. v. art. 1.

collyria

collyria with powdered tutty, &c. and thus render this diſtinction* no ways beneficial in practice.

When the eye-lids have been troubled with a ſlight ſoreneſs, ſcabs, and itching, *(pſorophthalmia)* I have known the common method of applying the *linimentum e lapide calaminari*, *unguentum tutiæ*, or white vitriol diſſolved in water, ſucceſsful; though a more ſpeedy method is rubbing them gently once or twice a day with the finger juſt wet with Hungary water, or ſpirit of wine; which dry, and where there is little or no preternatural heat, immediately more or leſs deſtroy ſenſibility, and relieve the patient. When ſmall ulcers accompany this complaint, I treat them as I would do other ulcers, by keeping them clean, digeſting, and then healing them; for which purpoſes they may be waſhed every morning with

* The different diſtinctions in this diſeaſe are ſeen at one view in Cullen's Synopſis.

warm

warm milk, and a ſmall portion of honey of roſes, by the help of a probe armed with lint: betwixt whiles, a very mild ſoft digeſtive, ſpread upon a few threads of lint, may be applied; and when the ſores ſeem inclined to heal, the epulotic cerate (made as directed) will finiſh the cure, unleſs the parts about the little ulcers are relaxed, and then more drying or aſtringent remedies will be neceſſary. Mr. Ware*, indeed, propoſes a more compendious method; and though it does not appear by what means it gives relief, the facts adduced are ſatisfactory, and will highly pleaſe thoſe who have ſenſe enough to be ſatisfied with facts. Bruiſes of the eye are to be treated like other external bruiſes, by bleeding, purging, and outward applications: I commonly apply a neutralized ointment or poultice. The lymph which drains into the eye is the moſt powerful diſſolver of coagulated

Bruiſes of the eye.

* Loc. cit.

blood;

blood; but if blood mixes with the aqueous humour, and cannot be abſorbed, the neceſſity and ſafety of opening the cornea obliquely is known to every one; and if weakneſs requires any farther aſſiſtance, it will hereafter appear. I perfectly agree in opinion with thoſe who diſapprove of powders of any kind in lotions for the eyes. It was probably owing to their effects that an eminent writer * ſaid, thoſe fared worſt where they had been moſt uſed. Theſe things being premiſed, we will treat firſt of a ſingle inflammation of this part, from its being naturally weak and irritable, from taking cold, from extraneous bodies, or from other accidental cauſes, attended with a greater or leſs flux as circumſtances happen: after obſerving, that if we take a view of the writers on this ſubject even to this day, one might be led, from ſome of them, to imagine that

Powders improper in ſore eyes.

* Wiſeman.

an ophthalmy requires a different kind of treatment from other inflammations; otherwiſe ſome curious chemical devices for this purpoſe could not ſo lately have been introduced among us. An air of empiriciſm has in general appeared in the treatment of this complaint, owing to the manner in which the intentions of the ancients, who wiſhed to mitigate irritation, and repel the flux of humours, were carried into execution. Hippocrates ſays, "pains in the eyes are cured by "drinking pure wine, or by the bath, or "by fomenting, or by bleeding, or by "purging:" but, as Celſus obſerves, "without explaining the proper times for "theſe, and the reaſons for their uſe, *in* "*which the principal part of medicine con-*"*ſiſts.*" In other places he ſpeaks of the *inſpiſſated* juice of plants *, &c. which he uſed in inflamed eyes; but it is from

* See Marinellus's Commentary, who has collected all he ſays about the eyes together.

Galen

Galen † that all the remedies which have ſince been in vogue took their riſe. What he collected from various authors was copied by the Greeks, and diſperſed into every quarter where their writings were read; and theſe in one ſhape or other have deſcended to our days. It muſt be confeſſed, however, that Galen knew how and when to apply the remedies he recommends. Along with ſuitable evacuations he uſed mild fomentations, joined with moderate repellents in the firſt ſtage. To theſe, detergents of the abſorbent kind were added, when ulcers or ſordes made them neceſſary. Afterwards ‡, where the flux upon the eye was great, even coblers ink, with honey, were applied to the eye-brows and forehead to reſtrain it. Celſus ‖, who depended much upon reſt and abſtinence, recommends a kind of

† De Comp. Med. Secund. loc. lib. iv.
‡ Paulus, lib. iii. cap. 2.
‖ Lib. vi. cap. 6.

defenſative to compreſs the veins, and prevent the flux. He applied cooling lenients on the firſt days. When the pain is great, he adviſes anodynes, clyſters, and bleeding; but afterwards, lenient and gentle repelling medicines united, are to take place. Of this ſort he has copied a variety of collyria from different practitioners, each preferring his own remedy to that of his neighbour; though all of them were nothing more than copies of the originals from whence they were taken. Has not the ſame practice been all along continued? and has it not given riſe to noſtrum-mongers and quacks boaſting of their ſpecifics in the cure of this diſeaſe? Yet it is moſt certain, that, like all other inflammations, it gives way to thoſe remedies *which remove the irritating cauſe, and leſſen the ſenſibility of the part*; for which purpoſe different applications, according to circumſtances, are neceſſary.

How cured.

Wiſeman

Wiſeman properly adviſes us to conſider whether the diſeaſe be in its beginning ſtate, or declenſion; and to proportion the medicaments accordingly: for let the empirics boaſt of this or that univerſal collyrium; they cannot cure ophthalmia with one particular remedy. It is certainly true, that in the beginning of inflammation, cooling ſedatives are proper; when of conſiderable continuance, reſolvents ſhould ſometimes be joined with them; and in the declenſion, ſtrengtheners will often be neceſſary. Nevertheleſs, the applications ſpoken of in the latter end of the firſt chapter, will very often preclude the neceſſity of other treatment, if perſiſted in with due regularity, and occaſionally aſſiſted by bleeding, purging, and cooling diuretics. I commonly give calomel and the purging ſalts three or four times, at proper diſtances; diuretic ſalt betwixt whiles in any proper vehicle, and the bowels are afterwards opened two or three times a day with

Treatment in the firſt ſtage.

ſmall doſes of Glauber's ſalt diſſolved in water, or the regenerated tartar in the infuſion of ſena; as in other inflammations. For I have ever found, under proper reſtrictions, according to the aphoriſm of Hipppocrates, that *thoſe affected with an inflammation in the eyes, are relieved by purging.* An antiphlogiſtic diet ſhould aſſiſt this proceſs; and be it remembered, that when the veſſels are unloaded, and the inflammation has a tendency to ſubſide, briſk purges do injury, in the manner we have already mentioned, and ſhall hereafter ſhew, in ſpeaking of ulcers.

It muſt be confeſſed, however, that it ſometimes happens that the cream of lead, where the parts about the eye are much ſwelled, does not anſwer the end propoſed, owing probably to the obſtruction it is incapable of removing; but upon the fluid being ſet at liberty by a neutralized ointment, or a fomentation compoſed of the heads of poppies, marſh-

mallows,

mallows, and a ſmall portion of regenerated tartar, or crude ſal ammoniac and water, applied warm, it generally becomes effectual. Linen cloths, four doubles, wet in it, and removed twice a day, lie eaſy and moiſt upon the part, without over-relaxing, and ſeldom fail, where an irritating cauſe does not interfere, in reducing the preternatural ſenſibility and its conſequences. I find one drop of laudanum put into the eye once or twice a day, with due perſeverance, ſufficiently anſwers our intention, where it can poſſibly do ſervice, without occaſioning pain. It may be uſed in this manner with advantage, where the ſenſibility in the beginning is often exquiſite, and where few other remedies can be applied without giving offence. Mr. Ware *, who firſt introduced this remedy to the public in

* Remarks on the Ophthalmy, &c. 1780, London, to which uſeful book the faculty are much indebted. Home (Principia Medicina) has given a conciſe view of the general doctrine on this ſubject.

the preſent inſtance, applied the thebaic tincture in larger quantity, and, beſide the uſual evacuations, added ſometimes the aſſiſtance of bleeding at the temples, with leeches; and immediately afterwards the application of a ſmall bliſter to the part. But the caſes * he has publiſhed, and my own experience, perſuade me he would have had equal ſucceſs if he had confided more in his own remedy. I muſt confeſs I am no friend either to the application of leeches or bliſters near to the affected part in this inſtance; becauſe I have ſeveral times ſeen them do miſchief. Leeches moſtly, if not always, leave an inflammation behind; a greater degree of irritability in the neighbouring parts, even to the eye, enſues, and of courſe weakneſs muſt be a conſequence. The ſame may be ſaid of bliſters, which inflame to a conſiderable diſtance; and I am certain I have too often ſeen the inflammation in the eye increaſed by their

* See the firſt caſe.

uſe.

uſe. Beſide, if we are not miſtaken in the laws of the circulation, local bleeding (except in particular caſes foreign to the matter in queſtion) can only afford a temporary relief. I have ſeveral times bled in the eye, by dividing the inflamed veſſels, without the leaſt good effect; and, as the blood does not irritate *, may we not in this work be purſuing a uſeleſs plan? I have never opened the temporal artery on this occaſion, becauſe I never ſaw occaſion for ſuch an expedient; having always found that bleeding at the arm, as the ſymptoms might require, could do all that I wanted from a loſs of blood: and it may be queſtioned much, whether dividing that branch of the temporal artery which goes toward the eye, cuts off the ſource of blood to the inflamed part, becauſe of the anaſtomizing veſſels.

Before I was acquainted with the cream of lead, I applied double cloths, wet in

* See Treatiſe of Inflam. p. 236 to p. 240.

cold water, as often as they had a tendency to become dry, which moſtly anſwered an exceeding good end in abating heat, in reducing ſwelling, and in leſſening or taking away pain: and where cold water happened to be offenſive, its being a little warmed removed this inconvenience. Nor have I laid this ſimple remedy aſide, but ſtill continue to uſe it occaſionally, where the heat is great; knowing the eminent ſervice it will generally afford. Cauſtics behind the ears, as Wiſeman uſed them, ſeem very capable of making a derivation from, without injuring the inflamed part; but where a flux of humours makes it neceſſary, a ſeton in the neck has always anſwered my purpoſe. When the eye-lids have been much ſwelled, I have repeatedly ſeen it produce the moſt deſirable effects; and have hence been led to think, that no other kind of external derivation, except iſſues, is neceſſary. When the eye-lids are ſwelled ſo as to confine the lymph which

is

is ſecreted in large quantity, they ſhould be preſſed open now and then to give it iſſue, and prevent its becoming acrid; and, indeed, in every inſtance it ſhould have a free diſcharge. A bread poultice, with the ſugar or vinegar of lead in it, may be applied, and the eye, if poſſible, waſhed with warm milk. But as ſoon as the tumor ſubſides, it ſhould be changed for the remedies before mentioned; becauſe emollients, though neceſſary in great tenſion, are too relaxing, if long continued, and protract the diſeaſe: which ends our account of the firſt ſtage of a ſimple inflammation of the eye, where leſſening irritability, and removing *extranea* or acrid matter, are the intentions of cure.

Second ſtage.

But it ſometimes happens, as in other inflammations, where the diſorder has been of long continuance, that obſtruction takes place; and that, though it may in part be ſubdued, yet it remains incurable till the obſtruction is removed.

It was under theſe circumſtances that Glauber's ſalt was applied to the young woman's eyes mentioned in the 99th page of my Treatiſe on Child-bed Fevers. I have ſince ſucceſsfully introduced it into common practice, where it ſeems neceſſary to remove obſtruction to promote a cure; and I have heard of others who have afforded their patients relief by this method: but I uſe laudanum and cream of lead, or cold water, an hour or two after it is diſſolved, and has created a running, in hopes of keeping the irritation within due bounds. I have frequently uſed a ſoft liniment, compoſed of the *unguentum e lapide calaminari*, (Cheſelden) camphor, and ſocotorine aloes, for this purpoſe, putting a little bit of it into the eye every night with a hair pencil, and moſtly with good ſucceſs: but I think it gives more pain than the other method; and I have on this account given preference to that which is mildeſt. Camphor has long been a prin-

cipal ingredient in ophthalmic collyria, ointments, &c. and its good effects are, without doubt, owing to its ſedative property; but it muſt be remembered, that it is one of thoſe remedies which leſſen irritability by increaſing warmth, and invigorating the nerves; and therefore ſeems moſt proper where nervous energy is weakened, and the heat not great. This is the caſe probably in which electricity has done ſervice, if it be true * that it has ſometimes cured an ophthalmia. The electric aura, as we have already obſerved, certainly increaſes the circulation in the capillary tubes of animals, and it does the ſame in vegetables. There are facts ſufficient upon record, I think, to prove that it is the cauſe of the motion of the fluids in both of them; but whether it is capable of removing obſtruction in the preſent inſtance, I cannot ſay from my own experience, not having had any occaſion for its uſe.

* The doubt is, the part that nature might act in the cure.

Third ſtage.

In the third ſtage, weakneſs is the affection we have to contend with; and for this purpoſe aſtringent and ſtrengthening remedies are proper. I knew a gentleman whoſe eyes had long been ſore, ſomewhat inflamed, and ſo exceeding weak, that he could not bear the light. He tried various remedies during a length of time without advantage; but was at laſt ſoon and perfectly cured by the common application, compoſed of alum and the white of an egg. There is an inconvenience, however, in this application, from its becoming dry and ſticking to the eyelids. On which account I have made the alum curd into a poultice with conſerve of roſes *, and have ſeen it produce good effects. A lotion of alum and water has the appearance of being equally powerful with the decoction of galls, &c. This is the time to uſe the collyria of

* The ſugar in the conſerve may ſeem to interfere with the main intention, but gentle ſtimulants, joined with aſtringents, perhaps are ſometimes uſeful.

camphor,

camphor, white vitriol, and water; the *aqua aluminoſa*, or *camphorata*, filtered, of Bates, Sir Hans Sloane's liniment, and ſuch like compoſitions: but, after all, I queſtion much whether any of them deſerve preference to cold water, which has often afforded me great pleaſure in the recovery of patients in this ſituation, when uſed in the manner already directed. If a ſucceeding warmth enſues, it does ſervice; if the parts remain cold, brandy muſt be added, or it will not have a good effect. But in the uſe of all theſe things, much depends upon the aſſiſtant knowing the power and effects of his remedies, and when to uſe them; otherwiſe he will want ſteadineſs, and often be diſappointed in ſeeking after variety: whereas when obſervation has taught him how far, and under what circumſtances, they may be depended upon, he will proceed with reſolution, and thus accompliſh the end in view.

I have

Films and excreſcences.

I have ſeen ſuperficial films and excreſcences from the cornea, which ſometimes remain after the inflammation is gone moſtly off, removed by the deterſive liniment mentioned in the ſecond ſtage; by the *aqua ſapphirina*, glaſs finely levigated, and by honey, which perhaps deſerves preference to all of them. It has been noted for a gentle corroſive or detergent ever ſince the days of Celſus; and it will be found, not only in this inſtance, but in ſores, to anſwer theſe intentions often in a deſirable manner; and where it is not powerful enough, it may readily be made ſtronger by adding aloes or other detergents. But whenever deterſives, unconnected with a ſedative, are employed, a drop of laudanum ſhould occaſionally be made uſe of with the ſame intentions as we give laudanum after a purge. Inſtead of theſe, ſome prefer a lotion compoſed of one grain of ſublimate, and four ounces of water; but I have never uſed it,

Laudanum to be uſed with detergents

it, nor do I think detergents neceſſary to remove little opaque ſpecks *(albugo)* from this part. Opaque ſpecks.

A youth, many years ſince, had ſeveral ſpecks on the cornea in both eyes, in conſequence of long continued inflammation, for which the powder of glaſs was firſt applied, and afterwards the *aqua ſapphirina*; both which, though uſed with the utmoſt caution, always renewed the former diſeaſe: on which account I diſuſed them, entirely relying on ſtrengthening the eyes with cold water; upon which the opacity diſappeared in time. I have ſince, in a multiplicity of inſtances, purſued the ſame method with the ſame ſucceſs; and am hence led to believe when ſmall opacities upon the cornea are curable, nature, thus aſſiſted, will herſelf accompliſh the buſineſs. The propriety of wearing paſteboard lined with green ſilk, to prevent light offending inflamed eyes, is ſufficiently obvious, and we now turn Caſe.

our

our thoughts to the uſe of internal medicines in this complaint.

The internal treatment.

If the pain in this diſeaſe is ſo great as to require opium, it may without heſitation be occaſionally given along with ſaline medicines; but the inflammation not unfrequently brings on general irritability, and ſubjects the patient, in the manner already mentioned *, to a kind of intermitting fever, which after due evacuation, are both cured by the bark, either alone, or joined with neutral ſalts, &c. as circumſtances require. I have ſeveral times ſeen a gloſſy kind of inflammation, in which the ſclerotica is only ſtreaked with blood, cured by the bark: and this remedy proves the beſt aſſiſtant where natural debility and tenderneſs in the eyes prevails; eſpecially when joined with light chalybeate waters, a mild reſtorative diet, cool air, and moderate exerciſe, un-

Opium.

Bark.

Steel.

* Chap. I.

leſs

leſs there is unuſual heat; for then inſtead of ſteel, nitre ſhould be joined. Roſemary, ſage, wild valerian root, &c. have been ſaid to be the beſt inward medicines in inflamed eyes; but ſurely not while any conſiderable degree of inflammation exiſts, as they have a heating property! I know the ſimple powder of valerian, not altered by combination, is a moſt powerful medicine where the ſight is weak from nervous affection, unattended with inflammation. I have repeatedly ſeen it do more in this inſtance than I ever ſaw medicines in general do in other diſorders; half a drachm being mixed in common water and taken immediately, repeating it three times a day for a month or ſix weeks together. Perhaps its ſtrengthening the ſight after inflammation, where debility had taken place, might introduce this claſs of medicines into that part of practice in which they ought not to interfere.

Nitre, when to be joined with the bark.

Nervous medicines

Valerian.

On the other hand deobſtruents are ſometimes, as we have juſt obſerved, neceſſary; and mercury has been given with good ſucceſs in this inſtance: nor are its effects entirely to be aſcribed to removing obſtruction in the *vaſa minima*, as it corrects more kinds of acrimony than one. Some have recommended Æthiops mineral in this inflammation, when it proves obſtinate. Mr. Gooch* has given ſome caſes where corroſive ſublimate did eminent ſervice; and I myſelf have ſeen ſimilar good effects from that remedy: but I prefer very ſmall doſes of pure quickſilver to all the boaſted chemical preparations of this mineral; and am convinced it will do every thing that mercury can do, without the leaſt inconvenience to the patient, where it is proper to be given. Whereas by a union of

Mercury.

* Surgery, p. 44, & ſeq. ſecond edit.

different

different ſalts and the action of the fire, it is armed with irritating *ſpiculæ* without adding to its mercurial powers. A ſingle grain of quickſilver extinguiſhed in ſtarch, repeated in the manner we give the ſolution of ſublimate, will have powerful effects without torturing the patient; but it is frequently neceſſary to defend the bowels, or render them inſenſible to irritation, by joining with the other, ſpermaceti, laudanum, or both.

It is happy for the patient that the ſpiculæ added to it by chymiſts, are diſſolved in the *primæ viæ*; I believe all the preparations of mercury, are decompoſed in this paſſage*; and I am of opinion, that giving ſmall doſes, adds to its efficacy, becauſe a grain of quickſilver taken twice a day, very often affects the teeth, if not prevented, in a very ſhort time†.

* See Treatiſe on Child-bed Fevers, p. 114.

† I have repeatedly ſeen twenty grains of quickſilver affect the teeth; would a ſcruple, taken at once, produce the ſame effect?

Whereas a large quantity paſſes itſelf off ſometimes without any remarkable effect. Mr. Orme, the famous barometer-maker, formerly of this place, put at leaſt three pounds of quickſilver into a porringer for uſe; the ſervant girl, by miſtake, haſtily poured upon it milk pottage for a lad's breakfaſt, all which he eat up, without knowing any thing of the matter. The accident however was immediately diſcovered, and Torricellus began to think of recovering his property. He kept the boy at home, and provided conveniencies for collecting his evacuations, in which he expected the quickſilver to appear. But in this he was miſtaken, for a blueiſh ſmut only, which ſeemed to come from every part of his body, appeared upon the ſheets; and he never experienced any ſenſations from this enormous doſe of mercury! Whether the ſuggeſtions I have advanced, regarding the taking ſmall and large quantities of it, be true or falſe, of this

this I am certain, that I have ſeen it produce the moſt deſirable effects in inflammations of the eyes, where obſtruction, or acrimony which had no tendency to diſſolve the blood, required its uſe. When to be given.

The venereal ophthalmia, is frequently obſtinate. I have ſeen the cornea oftener become opaque in this than in other inflammations of the eye; the topics before recommended, are however here proper; and for the lues itſelf, mercury is the cure. But there are none more troubleſome than that which ariſes in ſcrophulous habits; for permanent relief can only be given by removing the cauſe of the diſeaſe *. But of this we can more fully and properly ſpeak, when we treat of what has occurred to us about the nature and cure of this complaint. It is ſufficient here to obſerve, that the intentions of cure ſeem to be, firſt, in rendering, if poſſible, the whole ſtate of the veſſels Venereal Ophthalmia. Scrophulous Ophthalmia.

* See Scrophula.

pervious,

pervious, and making a ſufficient derivation from the affected part; both which may be attempted at the ſame time: in correcting the impediments to digeſtion in the alimentary canal, and, when the veſſels are unloaded, properly to ſtrengthen the ſyſtem.

When the parotids are inflamed, diſperſion is evidently the proper method of cure; but of this we ſhall hereafter ſpeak, in treating of inflamed glands. Wherefore this concludes our general account of thoſe inflammations, which, from their nature and ſituation, ſhould always if poſſible, be cured by diſcuſſion: and it being a proper place for making the firſt diviſion in this work, thoſe which require a different treatment, will be conſidered in the next Volume.

END OF THE FIRST VOLUME.